PB# 03-32

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PB #03-32 WAL-MART ~~SUBDIVISION~~ L.L. CHG
RT. 300 (UNION AVE) (APD ENG.)

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walmart
See additional ~~maps~~ maps

TOWN OF NEW WINDSOR
PLANNING BOARD
APPROVED COPY
DATE: 11/19/04

SPECTRA ENGINEERING, P.C.

STORMWATER POLLUTION PREVENTION PLAN

For
VALLEY FIELDS ESTATES
Town of New Windsor
Orange County, New York

Project No. 02150

Prepared by:
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Date: August, 2004
Revised: August 26, 2004

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

1.0 Introduction

Spectra Engineering, Architecture and Surveying, P.C. (SPECTRA) has prepared this Stormwater Pollution Prevention Plan in support of the Preliminary Subdivision Application and of the Notice of Intent to be covered by the SPDES General Permit for discharges associated with construction activity, for the proposed Valley Fields Estates Subdivision to be located on Bethlehem Road in the Town of New Windsor, Orange County, New York. A site location map is located in Appendix A.

The Valley Fields Estates project site is located approximately 2.5 miles west of the New York State Thruway, between Bethlehem Road and Jackson Avenue. The parcel consists of 33 acres of land covered primarily with second growth woods and meadow. Located in a rural residential area, the vicinity of the property is comprised of residential properties and vacant land vegetated with second growth woods and brush.

The property lies within the Moodna Creek watershed. The site drains to Beaverdam Lake which them flows into the Moodna Creek, a tributary of the Hudson River. No FEMA Flood Zone boundaries exist within the site.

2.0 Existing Conditions

Three drainage design points (DPs) have been selected for this project and addressed in this report. One design point (DP-1) is in a gully in the northwest corner of the property where most of the runoff originating on the property is collected, the second (DP-2) is located downstream of the pond at the south end of the site (Existing Pond 3), and the third (DP-3) is located in a ditch along Jackson Avenue at a point where all runoff originating from the entrance area of the property is collected. An illustration of the existing drainage area is located in Appendix A.

2.1 Drainage Area 1

Drainage Area 1 (DP-1) is a small area of approximately 3.2 acres that lies completely within the property limits. Existing ground cover in this area consists of woods and brush. Runoff generally flows in a northerly direction toward DP-1. There are no existing buildings or impervious cover in this area. Appendix B-1 contains hydraulic model results for existing Drainage Area 1 conditions during the 1-, 10-, 25-, and 100-year storm events.

2.2 Drainage Area 2

The largest and most significant drainage area for this project is Drainage Area 2 (DP-2). The area contributing to DP-2 under existing conditions encompasses 53 acres, including woods, brush, lawn, and residential housing.

The onsite portion of this drainage area is approximately 21 acres. The offsite drainage area contributing to DP-2 consists of an area between the project site and Bethlehem Road and a smaller area east of Bethlehem Road. The contributing area east of Bethlehem Road is limited in the north by a proposed residential subdivision and in the south by a swale along Bethlehem Road. The subdivision will divert runoff to the north away from the project site. The roadside swale diverts runoff to the south, preventing it from reaching the project site.

Runoff generally flows in a southerly direction to the existing pond north of the existing driveway (Existing Pond 2) and then flows through a 30 inch corrugated metal culvert under the driveway to the existing pond south of the driveway (Existing Pond 3). Existing Pond 2 has overtopped the driveway in the past during extreme storm events. As a result, Existing Pond 2 is modeled with two outlet structures flowing into Pond 3, the 30 inch culvert and a 75 ft long broad crested weir to simulate the characteristics of the driveway during a flooding condition. It should be noted that recent storm events

were observed by the owner overflowing Pond 2 in the direction of Jackson Avenue. This may be a result of ongoing erosion of the dirt driveway.

Existing Pond 3 is currently equipped with an 8 ft wide concrete weir which acts as the primary outlet structure. Hydraulic modeling indicates that Existing Pond 3 may also flood during large storm events over its west bank. Existing Pond 3 is modeled with two outlet structures, the 8 ft wide weir and a 90 ft weir which consists of the low area along the west bank of the pond. Appendix B-1 contains hydraulic model results for existing Drainage Area 2 conditions during the 1-, 10-, 25-, and 100-year storm events.

2.3 Drainage Area 3

The third drainage area consists of a small area, approximately 1.8 acres, near the entrance to the project site from Jackson Avenue. In this area runoff flows in a southwesterly direction toward Jackson Avenue. Existing ground cover includes woods, brush, lawn, residential housing and gravel roads. Appendix B-1 contains hydraulic model results for existing Drainage Area 3 conditions during the 1-, 10-, 25-, and 100-year storm events.

3.0 Proposed Conditions

Construction of 14 residential building lots served by approximately 2200 LF of 30 ft wide road is proposed for the Valley Fields Estates subdivision property. See Appendix A for an illustration of the proposed drainage areas.

3.1 Drainage Area 1

Drainage Area 1 is expected to decrease slightly in size after project completion. Proposed cover types for the area will include lawn and two residential lots with approximately 4000 sf of impervious area each, at the eastern edge of the area. The western portion of Drainage Area 1 will remain naturally occurring forest. The retention of natural vegetation in the lower portions of this drainage area and the minor increase in peak runoff do not justify the additional disturbance to provide storm water treatment. Appendix B-2 contains hydraulic model results for proposed Drainage Area 1 conditions during the 1-, 10-, 25-, and 100-year storm events.

3.2 Drainage Area 2

Drainage area 2 has been divided into five sub-drainage areas and encompasses 54 acres. The sub-drainage areas are 1S, 2S, 3S, 1U and 2U. See Appendix A, Drainage Plan-Proposed Conditions for relative locations of these areas within Drainage Area 2. Areas 1S and 2S have been designed with ponds to treat the required water quality volume based on the size of the drainage area and the amount of impervious area created by the project (See Appendix B-3 for Water Quality volume calculations). Impervious cover will be created by construction of the subdivision access road, side walks, driveways, and buildings. The impervious area created by the subdivision access road was measured for the purposes of modeling the proposed hydraulic conditions. The remainder of the impervious cover was assumed to be 4,000 sf per lot. Area 1S was assumed to contain 1.5 lots, Area 2S 5 lots, Area 3S 2 lots, Area 1U 4lots, and Area 2U does not contain any onsite lots.

Pond 1 serves area 1S and is intended to provide water quality treatment only. As a result, it will not provide attenuation of peak storm discharges from Area 1. Pond 2 provides water quality treatment for area 2S and controls peak flows from Pond 1 and areas 2S, 1U and 2U.

Pond 2 is the main control feature for peak discharge attenuation and is designed with a riser type outlet structure that discharges to Pond 3. Pond 2 and Pond 3 include Existing Pond 2 and Existing Pond 3 as part of the permanent pool. Existing Pond 2 and Pond 3

will not be disturbed. Ponds 1 and 2 provide approximately twice the required water quality volume for the areas they serve in permanent pools, therefore no extended detention of the water quality volume is required.

Area 3S is the drainage area associated with Pond 3. A forebay has not been designed for Pond 3 because most of the runoff entering the pond is in the form of sheet or shallow concentrated flows. Discharges from Pond 2 entering Pond 3 have previously been treated to remove suspended particles and the volume of the Pond 3 permanent pool is more than adequate to dissipate erosive flow velocities. Water quality volume is provided by the permanent pool, which is the same as Existing Pond 3, and nearly 10 times the required water quality volume for Area 3S. Pond 3 provides very little attenuation of peak flows, due to limited detention volume.

Area 1U is the on site drainage area which drains to the Main Pool of Pond 2. Area 1U consists of the back of lots 9-14, which is covered primarily by lawn. Water quality treatment is provided by the Pond 2 permanent pool and drywells on each lot. Water quality volume calculations have not been performed for this area because the volume provided in the permanent pool is presumed to be more than adequate.

Area 2U is the off site drainage area which flows on to the project site via a 36 inch culvert at station 11 + 30. The culvert discharges to a small swale entering northern end of Pond 2. Runoff from this drainage area is not allowed to come in contact with on site contaminants and is presumed to be free of contaminants upon entering the culvert. As a result, water quality treatment of this runoff is not required.

Appendix B-2 contains hydraulic model results for proposed Drainage Area 2 conditions during the 1-, 10-, 25-, and 100-year storm events.

3.3 Drainage Area 3

Drainage Area 3 is expected to remain unchanged in size after project completion. Proposed cover types for the area will remain the same as existing conditions except for the addition of a paved entrance road into the subdivision. Road drainage along Pin Oak Drive will back drained to Pond 3 to the greatest extent possible. Overtopping of Pond 2 in this direction will be completely eliminated. Insufficient pitch of the road side swale, along Jackson Avenue prohibits any additional stormwater treatment. Appendix B-2 contains hydraulic model results for proposed Drainage Area 3 conditions during the 1-, 10-, 25-, and 100-year storm events.

3.4 Stormwater Treatment

All of the permanent stormwater treatment features have been designed in accordance with the New York State Storm-Water Management Design Manual (October 2001). This is an accepted reference in Orange County and the Town of New Windsor.

Detention facilities will be provided such that proposed peak flows will be approximately the same as existing peak flows at the design point. This will mitigate the impact of the proposed construction on the existing drainage facilities on adjacent properties, on town road culverts, as well as along the reaches of Moodna Creek tributaries.

The following is a summary of the permanent stormwater treatment features proposed:

- Two micro-pool extended detention ponds with a forebay (if necessary) and permanent micropool, sized to maintain a permanent pool of water equivalent to at least 20% of the water quality volume (WQ_v) with at most 80% of the WQ_v stored for extended detention. The channel protection storage, the over bank flood protection volume and the extreme flood protection volume are provided above the permanent pool.
- One pocket pond with a forebay and permanent micropool, sized to maintain a permanent pool of water equivalent to at least 50% the WQ_v with at most 50% of the WQ_v stored for extended detention. The channel protection storage, the over bank flood protection volume and the extreme flood protection volume are provided above the permanent pool.

In order to comply with the NYSDEC/USEPA SPDES General Permit for Stormwater Discharge regulations, the stormwater collection and treatment systems have been designed to do the following:

- Capture and treat 90% of the average annual stormwater runoff volume. The Small Storm Hydrology Method presented in Appendix B of the Design Manual was followed to calculate a modified curve number and subsequent peak discharge associated with the 1.1 inch rainfall event. These calculations are attached as Appendix A.
- Provide 24 hour extended detention of post-developed 1-year, 24-hour storm events (Channel Protection).
- Capture and control the peak discharge from the 10-year (Overbank flood protection), 25-year (Town culvert protection), and 100-year (Extreme flood protection) post-development rates to the respective pre-development rates.

The following table summarizes the results of the existing and proposed hydraulic models for Drainage Area 1.

Table 1: DP-1 Peak Discharge Comparison

Design Storm	Existing Peak Flow Rate (cfs)	Proposed Peak Flow Rate (cfs)
1 Year Storm	1	2
10 Year Storm	5	7
25 Year Storm	6	8
100 Year Storm	10	12

The small size of the drainage area combined with changes in cover type only in one portion of the drainage area, make existing and proposed peak discharges at DP-1 nearly identical. Detention facilities are not necessary for Drainage Area 1 based on the existing and proposed peak flow rates at DP-1. Water quality treatment for this area will be provided by drywells sized to treat the impervious area of each lot.

The following table summarizes the results of the existing and proposed hydraulic models for Drainage Area 2.

Table 2: DP-2 Peak Discharge Comparison

Design Storm	Existing Peak Flow Rate* (cfs)	Proposed Peak Flow Rate* (cfs)	Pond 2 Freeboard (ft)	Pond 3 Freedboard (ft)
1 Year Storm	12	14	5.0	1.4
10 Year Storm	36	36	2.0	1.1
25 Year Storm	50	49	1.8	1.0
100 Year Storm	88	87	1.0	0.6 +

*Total Pond 3 outflow + 1.0 ft with minor regrading

Water quality treatment for this drainage area is provided by Ponds 1, 2, and 3 and drywells for each lot within the project area. Drainage Area 2 takes advantage of an exception to the channel protection volume detention time requirement which states, channel protection volume "is not required at sites where the resulting diameter of the extended detention orifice is too small to prevent clogging." The size of the orifice that would be required to provide the channel protection detention time is only 3 inches (See Appendix B-3 for calculations). A six inch orifice has been provided to prevent clogging while maximizing the channel protection volume.

The following table summarizes the results of the existing and proposed hydraulic models for Drainage Area 3.

Table 3: DP-3 Peak Discharge Comparison

Design Storm	Existing Peak Flow Rate (cfs)	Proposed Peak Flow Rate (cfs)
1 Year Storm	1	2
10 Year Storm	2	3
25 Year Storm	3	3
100 Year Storm	4	5

The small size of the drainage area combined with minimal changes in cover type make existing and proposed peak discharges at DP-3 nearly identical. Detention facilities are not necessary for Drainage Area 3 based on the existing and proposed peak flow rates at DP-3. Water quality treatment for this area is not feasible.

3.5 Pollutant Loading and Control

Pollutant control in the stormwater discharges is presumptively met by following the New York State Stormwater Management Design Manual. See Appendix B-4 for pollutant loading calculations.

4.0 Erosion and Sediment Control Measures

During construction of the Project, extensive erosion and sediment control, consisting of vegetative and structural measures will be implemented. All of the proposed erosion control measures have been designed in accordance with the New York State Standards and Specifications for Erosion and Sediment Control (March 2003). This is an accepted reference in Orange County and in the Town of New Windsor.

Techniques to be utilized include:

1) Five-acre construction phasing.
2) Silt fencing.
3) Sediment traps.
4) Stabilized construction entrances.
5) Temporary and Permanent seeding of disturbed areas.
6) Water truck spray.

Silt fencing will be installed down gradient of all disturbed construction areas. Inlet protection for all catch basins will be installed as soon as a catch basin is installed. Stabilized construction entrances will be installed on Pin Oak Drive at the intersection with Jackson Avenue and on all proposed driveways prior to lot buildout. Two temporary sediment traps will be installed with volumes equal to 3,600 cubic feet/acre of contributing construction drainage area. One sediment trap will be located in the area of proposed Pond 1 and the other will be located in the area of proposed Pond 2 forebay. All disturbed areas that remain bare for more than two weeks will be temporarily seeded. Permanent seeding and mulching of final grading will occur within 14 days after final grading is complete. Erosion control netting will be installed on permanent slopes greater than 25%. A water truck will be used for dust control as necessary.

A construction plan comprised of erosion control phases, each under 5 acres in area as required by NYSDEC regulations, will be provided. Phase 1 will be the construction of Pin Oak Drive and both temporary sediment basins. Subsequent phases will be determined based upon projected house construction. No more than 4 lots will be disturbed at once. No work is to progress in subsequent phases until the inspecting engineer is satisfied that all conditions of the erosion control measures, both temporary and permanent, have been met in the current phase. All temporary erosion control features are to remain in place until all lots in their respective drainage areas are

constructed and stabilized. No changes to the phasing plans are to be made without the express written consent of the engineer and any governing agencies.

5.0 Maintenance of Erosion Control and Stormwater Facilities

Erosion control structures are those put in place to minimize the transport of sediment during the initial construction of the Valley Fields Estates subdivision. Stormwater control facilities are the permanent features of the subdivision designed to meet the requirements of the NYS Stormwater Management Design manual.

5.1 Erosion Control Structures

All erosion control measures and 5 acre erosion control phase boundaries must be checked by the inspecting engineer no less than once a week and within 24 hours of a rain event of more than 0.5 inches. In addition, the following procedures will be implemented to ensure erosion control structures are maintained in proper working order.

5.1.1 Silt Fence

Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence. Silt fencing will be replaced after one year of installation.

5.1.2 Temporary Sediment Trap

Sediment shall be removed and the trap restored to the original dimensions when the sediment has accumulated up to ½ of the design depth of the trap. Sediment removed from the trap shall be deposited in a protected area and in such a manner that it will not erode.

The structure will be inspected after each rain and repairs made as needed.

5.1.3 Stabilized Construction Entrance

The entrance shall be maintained in a condition which will prevent tracking of sediment onto public rights-of-way or streets. This may require periodic top dressing with additional aggregate. All sediment spilled, dropped, or washed onto public rights-of-way must be removed immediately.

When necessary, wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with aggregate, which drains to a sediment trap or a swale with check dams. All sediment shall be prevented from entering storm drains, permanent ditches, and watercourses.

Periodic inspection and needed maintenance shall be provided after each rain.

5.2 Stormwater Structures

All stormwater management facilities shall be routinely inspected and any necessary repairs made immediately in order to maintain all practices as designed. The facilities will be located inside separate Utility parcels or Utility Easements. The Town of New Windsor Highway Department or their delegated contractor will be authorized to enter the easements and perform maintenance. A Stormwater District will be formed around the limits of this subdivision to provide long-term maintenance of the stormwater management structures. The District will assess the property owners a fee in addition to their annual Town Property Tax to provide maintenance of the Stormwater facilities.

5.2.1 Pocket Ponds and Micro-pool Extended Detention Ponds

Sediment removal in the forebay will occur a minimum of every five years, or as needed when the sediment markers indicate that 50 % of total forebay capacity has been lost.

5.2.2 Silt and Sediment Disposal

Sediments excavated from stormwater ponds that do not receive runoff from designated hotspots are generally not considered toxic or hazardous material, and can be safely disposed of by either land application or land filling. There are no hot spot stormwater sources within this project.

6.0 Methodology and Software

6.1 Methodology

The following hydrological engineering standards and tools were utilized in the preparation of the hydrological engineering analysis:

- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS)
- U.S. Department of Agriculture, Soil Conservation Service (SCS)
- Hydrology Methodology; *Technical Release No. 20* (TR-20)
- Hydrology Methodology; *Technical Release No. 55* (TR-55)
- Hydrology Software; *HydroCAD* by Applied Microcomputer Systems

6.2 HydroCAD Software Description

The hydrological post-development condition stormwater runoff computations for the proposed project were conducted utilizing the methodology prescribed in the USDA Soil Conservation Service (SCS) Technical Release No. 55 (TR-55) and No. 20 (TR-20) manuals. The hydrological analysis was accomplished using a computer program that allowed proposed ponds and drainage channels, to be represented mathematically in a model that quantifies stormwater runoff volumes and rates through generated hydrographs. This program, HydroCAD v7 Stormwater Modeling System (© 2003) is produced by Applied Microcomputer Systems of Chocorua, New Hampshire. For this project, the program utilized the SCS 24-hour synthetic Type III Rainfall Distribution Curves for the 2, 10, 25, and 100-year storm frequency (hypothetical return) event having a 24-hour precipitation distribution amount as shown in the following table:

Table 4: Precipitation Depths for New Windsor

Storm Frequency	Precipitation Depth (inches)
2-year	3.5
10-year	5.5
25-year	6.0
100-year	8.0

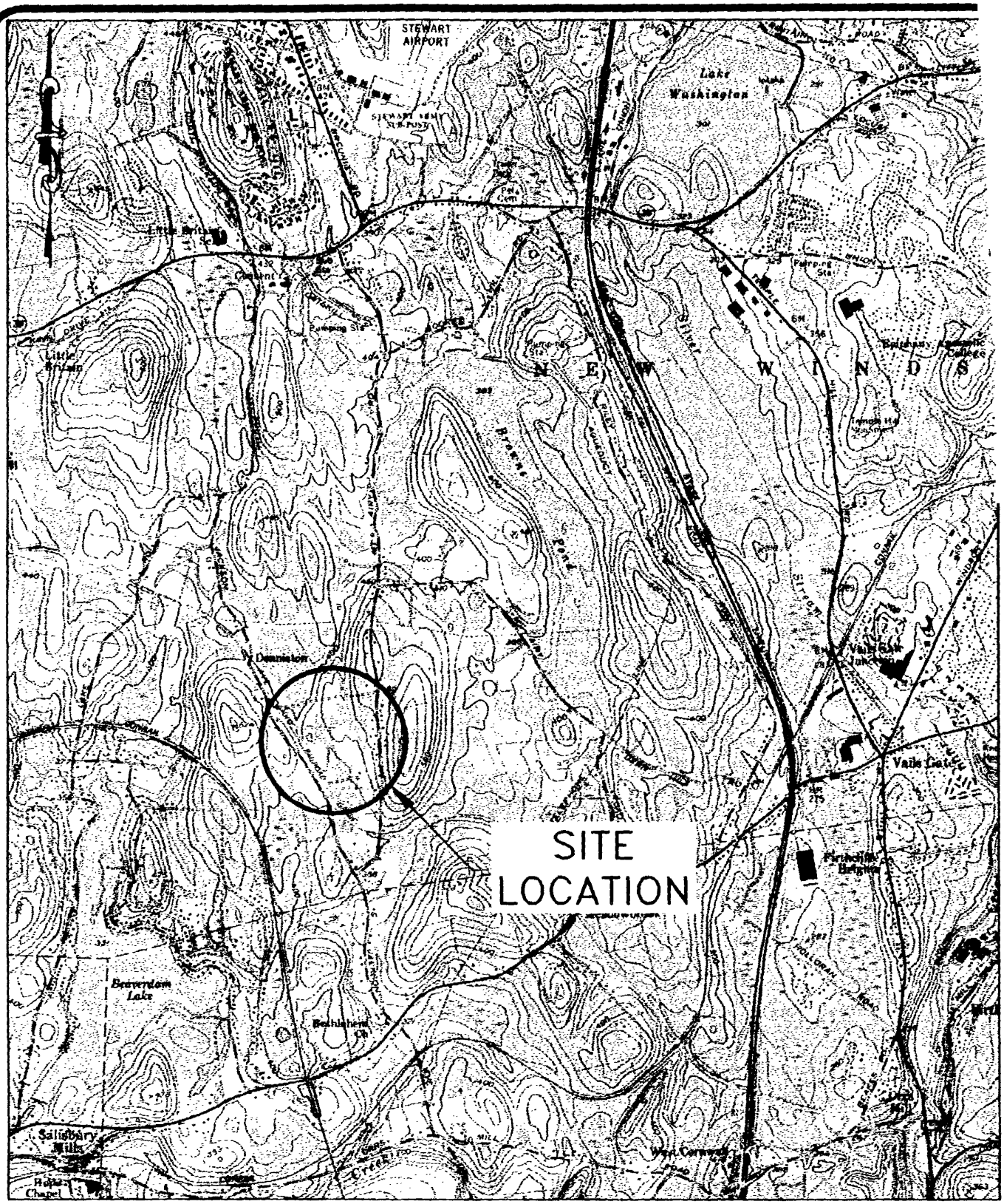
These values are based on the actual geographic location of the project on the SCS Rainfall Maps. The program, in accordance with the prescribed SCS methodology, utilizes Engineer defined SCS soil and topographic data and Time of Concentration flow paths within each defined drainage area (or subcatchment) to generate stormwater runoff.

APPENDIX A

LOCATION MAP

DRAINAGE AREA MAP-EXISTING CONDITIONS

DRAINAGE AREA MAP-PROPOSED CONDITIONS



USGS MAP: CORNWALL 41074-D1-TF-024

SPECTRA
ENGINEERING, ARCHITECTURE & SURVEYING, P.C.
19 British American Blvd.
Latham, NY 12110

SITE LOCATION MAP

LANDS OF MARJORIE SAWYER

BETHLEHEM ROAD

TOWN OF NEW WINDSOR ORANGE COUNTY, NY

PROJ. No.:	02150	DATE:	1-12-04	SCALE:	N.T.S.	DWG. NO.	02150	FIGURE	1

APPENDIX B

SUPPORTING STORMWATER CALCULATIONS

APPENDIX B-1

EXISTING CONDITIONS DRAINAGE CALCULATIONS

Subcatchment 1S: DA-1

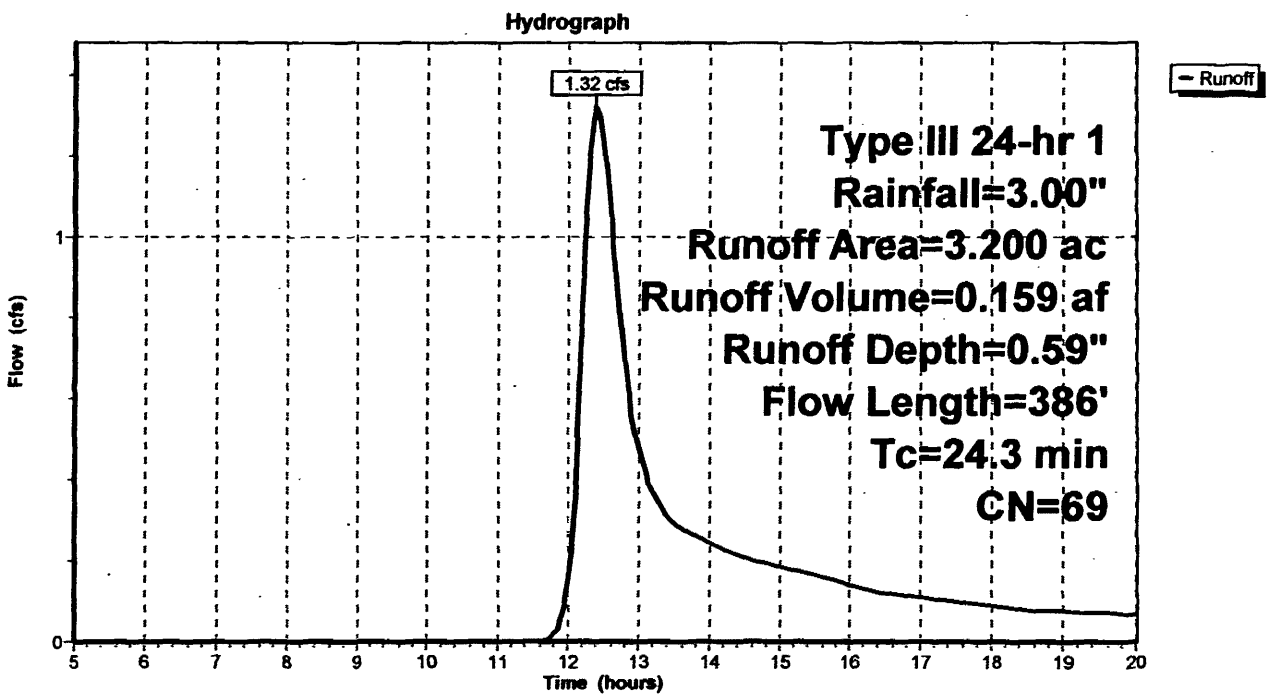
Runoff = 1.32 cfs @ 12.40 hrs, Volume= 0.159 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 Rainfall=3.00"

Area (ac)	CN	Description
2.430	70	Woods, Good, HSG C
0.770	65	Brush, Good, HSG C
3.200	69	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	83	0.0120	0.3		**Sheet Flow,** Fallow n= 0.050 P2= 3.50"
17.4	66	0.0530	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
2.8	237	0.0800	1.4		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.3	386	Total			

Subcatchment 1S: DA-1



Subcatchment 1S: DA-1

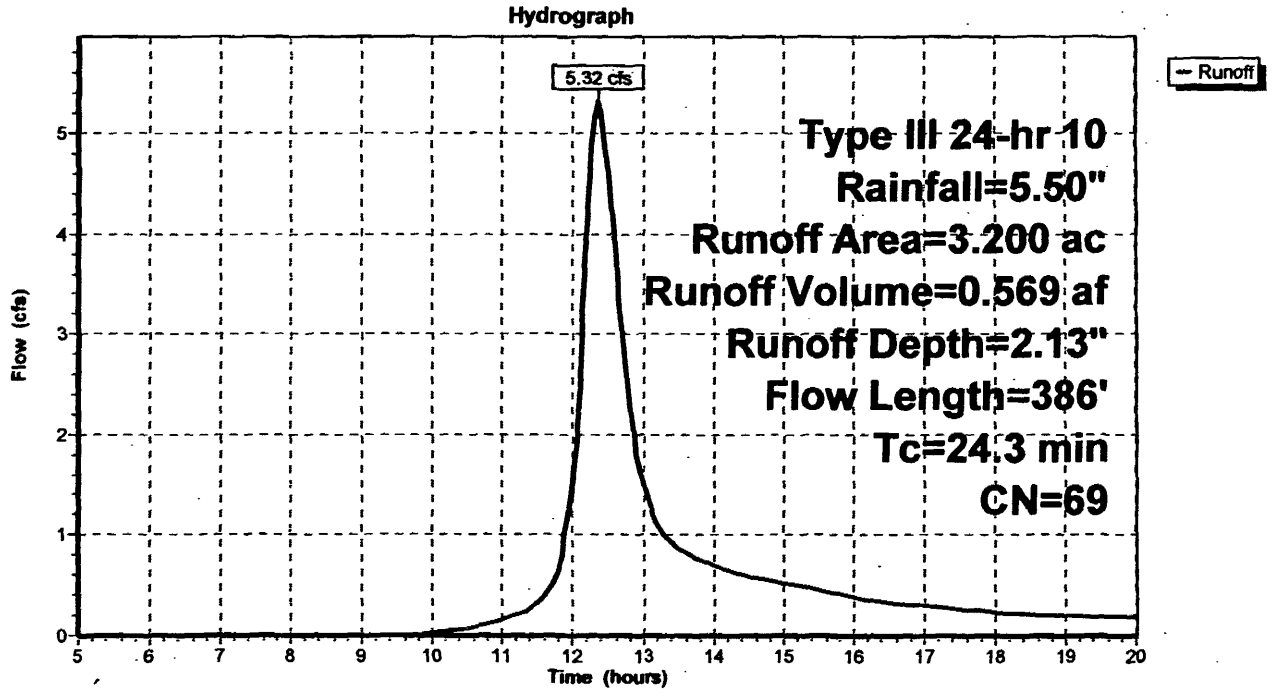
Runoff = 5.32 cfs @ 12.35 hrs, Volume= 0.569 af, Depth= 2.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Rainfall=5.50"

Area (ac)	CN	Description
2.430	70	Woods, Good, HSG C
0.770	65	Brush, Good, HSG C
3.200	69	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	83	0.0120	0.3		**Sheet Flow,** Fallow n= 0.050 P2= 3.50"
17.4	66	0.0530	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
2.8	237	0.0800	1.4		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.3	386	Total			

Subcatchment 1S: DA-1



Subcatchment 1S: DA-1

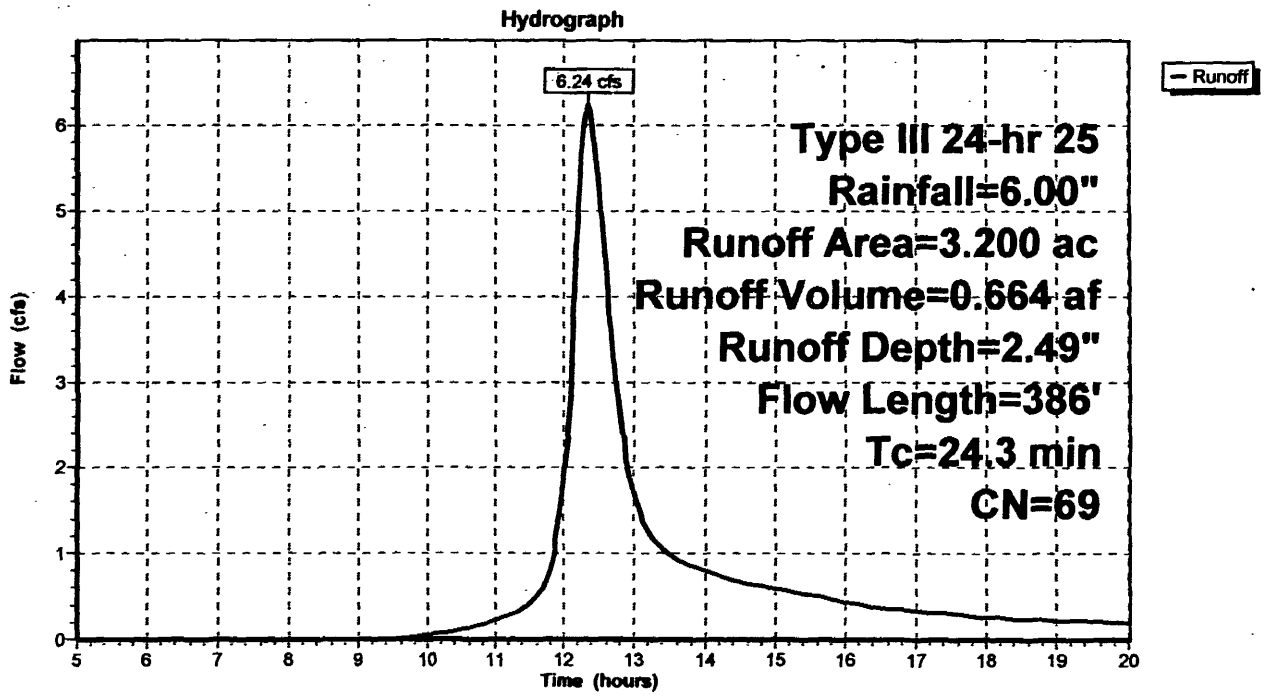
Runoff = 6.24 cfs @ 12.35 hrs, Volume= 0.664 af, Depth= 2.49"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Rainfall=6.00"

Area (ac)	CN	Description
2.430	70	Woods, Good, HSG C
0.770	65	Brush, Good, HSG C
3.200	69	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	83	0.0120	0.3		**Sheet Flow,** Fallow n= 0.050 P2= 3.50"
17.4	66	0.0530	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
2.8	237	0.0800	1.4		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.3	386	Total			

Subcatchment 1S: DA-1



Subcatchment 1S: DA-1

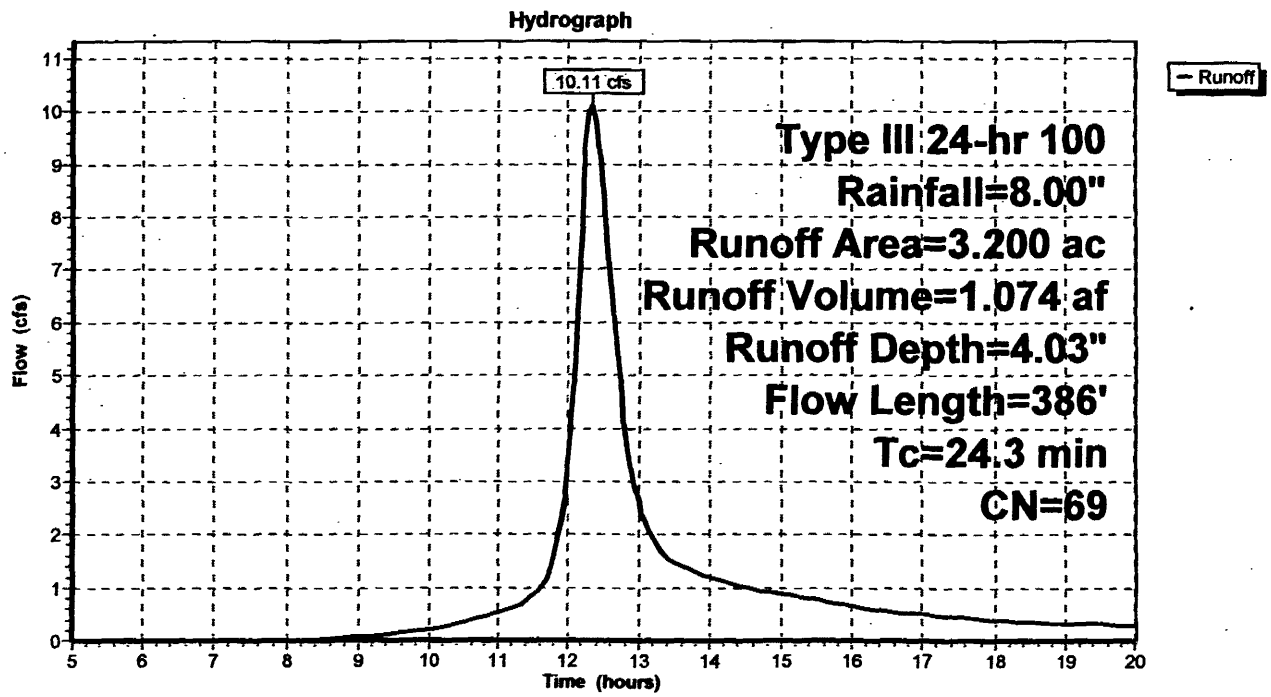
Runoff = 10.11 cfs @ 12.34 hrs, Volume= 1.074 af, Depth= 4.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Rainfall=8.00"

Area (ac)	CN	Description
2.430	70	Woods, Good, HSG C
0.770	65	Brush, Good, HSG C
3.200	69	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	83	0.0120	0.3		**Sheet Flow,** Fallow n= 0.050 P2= 3.50"
17.4	66	0.0530	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
2.8	237	0.0800	1.4		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.3	386	Total			

Subcatchment 1S: DA-1



Subcatchment 1S: DA-2

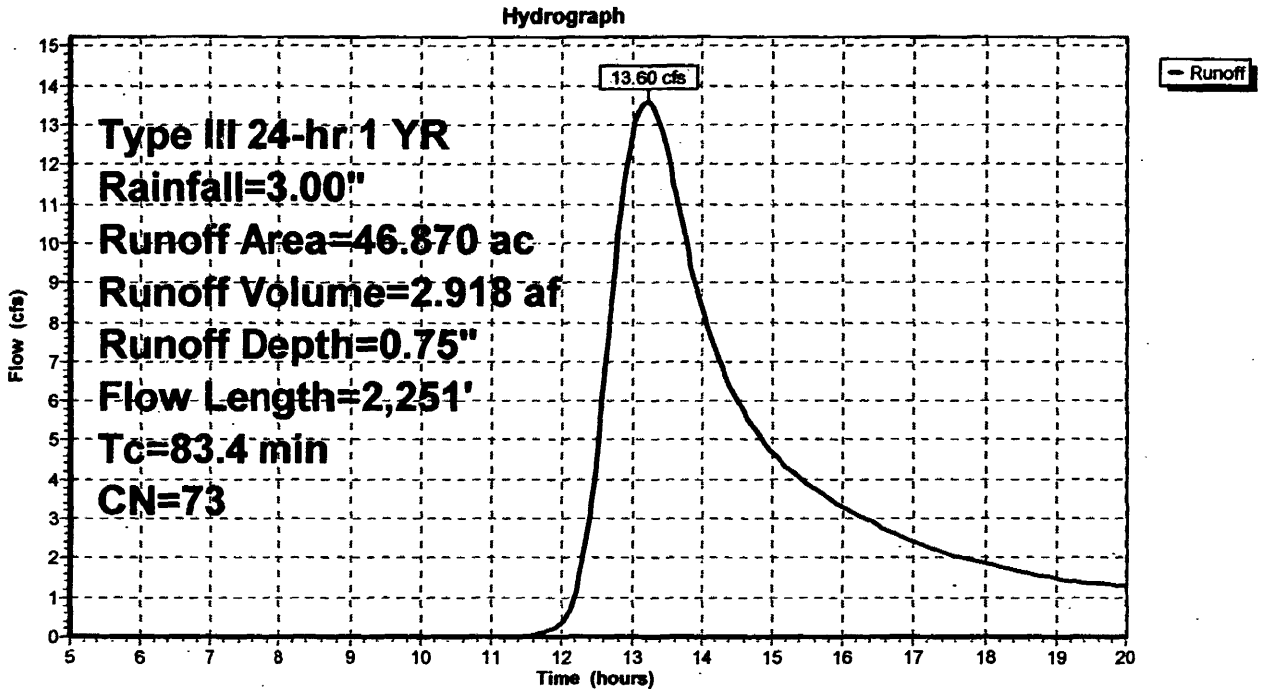
Runoff = 13.60 cfs @ 13.23 hrs, Volume= 2.918 af, Depth= 0.75"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YR Rainfall=3.00"

Area (ac)	CN	Description
13.660	65	Brush, Good, HSG C
0.910	98	Paved parking & roofs
18.170	79	1 acre lots, 20% imp, HSG C
11.910	70	Woods, Good, HSG C
0.040	77	Woods, Good, HSG D
2.180	73	Brush, Good, HSG D
46.870	73	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.2	150	0.0193	0.0		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
4.3	96	0.0219	0.4		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.3	203	0.0443	2.7	10.46	**Trap/Vee/Rect Channel Flow,** Bot.W=3.00' D=0.75' Z= 3.0 '/' n= 0.075
14.6	457	0.0438	0.5		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.5	423	0.0330	1.3		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.5	922	0.0263	2.0	8.06	**Trap/Vee/Rect Channel Flow,** Bot.W=3.00' D=0.75' Z= 3.0 '/' n= 0.075
83.4	2,251	Total			

Subcatchment 1S: DA-2



Subcatchment 3S: EXISTING POND 3 DA

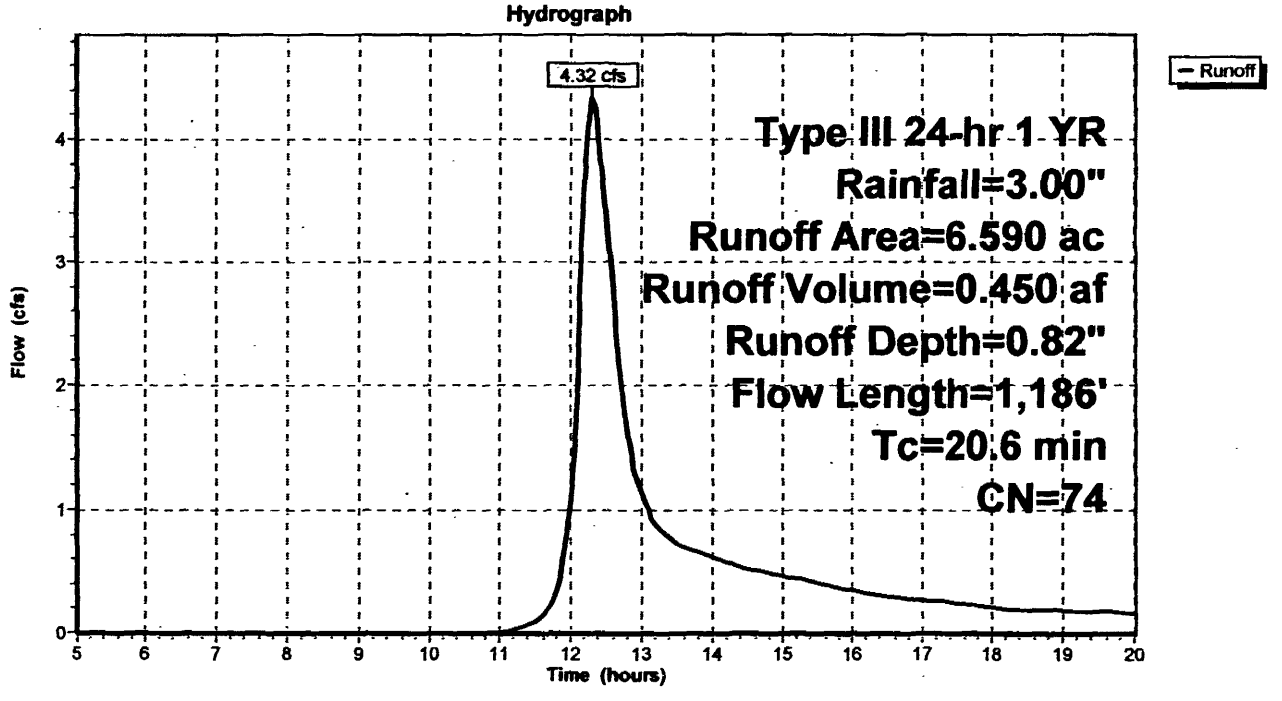
Runoff = 4.32 cfs @ 12.31 hrs, Volume= 0.450 af, Depth= 0.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YR Rainfall=3.00"

Area (ac)	CN	Description
2.020	65	Brush, Good, HSG C
1.930	73	Brush, Good, HSG D
0.590	98	Paved parking & roofs
1.880	79	1 acre lots, 20% imp, HSG C
0.170	70	Woods, Good, HSG C
6.590	74	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1600	0.4		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.50"
7.5	801	0.0650	1.8		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.0	285	0.0030	0.5	0.92	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.50' Z= 3.0 '/' n= 0.075
20.6	1,186	Total			

Subcatchment 3S: EXISTING POND 3 DA



Pond 2P: EXISTING POND 2

Inflow Area = 46.870 ac, Inflow Depth = 0.75" for 1 YR event
Inflow = 13.60 cfs @ 13.23 hrs, Volume= 2.918 af
Outflow = 12.30 cfs @ 13.50 hrs, Volume= 2.851 af, Atten= 10%, Lag= 16.5 min
Primary = 12.30 cfs @ 13.50 hrs, Volume= 2.851 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 415.19' @ 13.50 hrs Surf.Area= 15,800 sf Storage= 15,957 cf
Plug-Flow detention time= 26.5 min calculated for 2.851 af (98% of inflow)
Center-of-Mass det. time= 19.4 min (900.8 - 881.4)

#	Invert	Avail.Storage	Storage Description
1	413.70'	104,479 cf	**Custom Stage Data (Irregular)** Listed below

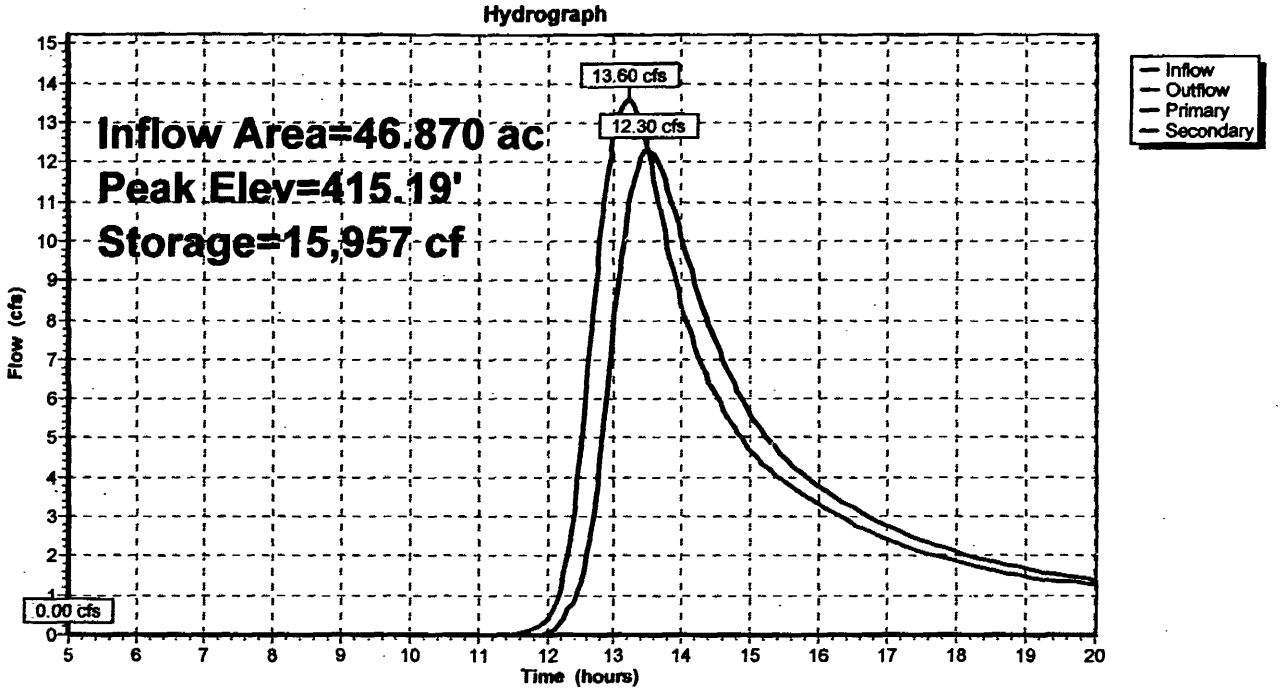
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
413.70	2,844	271.0	0	0	2,844
414.00	4,044	439.0	1,028	1,028	12,337
416.00	23,835	1,031.0	25,131	26,159	81,604
418.00	56,838	1,236.0	78,320	104,479	118,656

#	Routing	Invert	Outlet Devices
1	Primary	413.70'	**30.0" x 35.0' long Culvert** CMP, square edge headwall, Ke= 0.500 Outlet Invert= 412.80' S= 0.0257 '/' n= 0.021 Cc= 0.900
2	Secondary	417.00'	**75.0' long x 14.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63

Primary OutFlow Max=12.29 cfs @ 13.50 hrs HW=415.19' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 12.29 cfs @ 5.8 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=413.70' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: EXISTING POND 2



Pond 3P: EXISTING POND 3

Inflow Area = 53.460 ac, Inflow Depth = 0.74" for 1 YR event
Inflow = 13.03 cfs @ 13.49 hrs, Volume= 3.301 af
Outflow = 12.49 cfs @ 13.70 hrs, Volume= 3.146 af, Atten= 4%, Lag= 12.3 min
Primary = 12.49 cfs @ 13.70 hrs, Volume= 3.146 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 413.70' @ 13.70 hrs Surf.Area= 17,280 sf Storage= 15,695 cf
Plug-Flow detention time= 31.7 min calculated for 3.136 af (95% of inflow)
Center-of-Mass det. time= 18.3 min (909.8 - 891.5)

#	Invert	Avail.Storage	Storage Description
1	412.80'	35,007 cf	**Custom Stage Data (Irregular)** Listed below

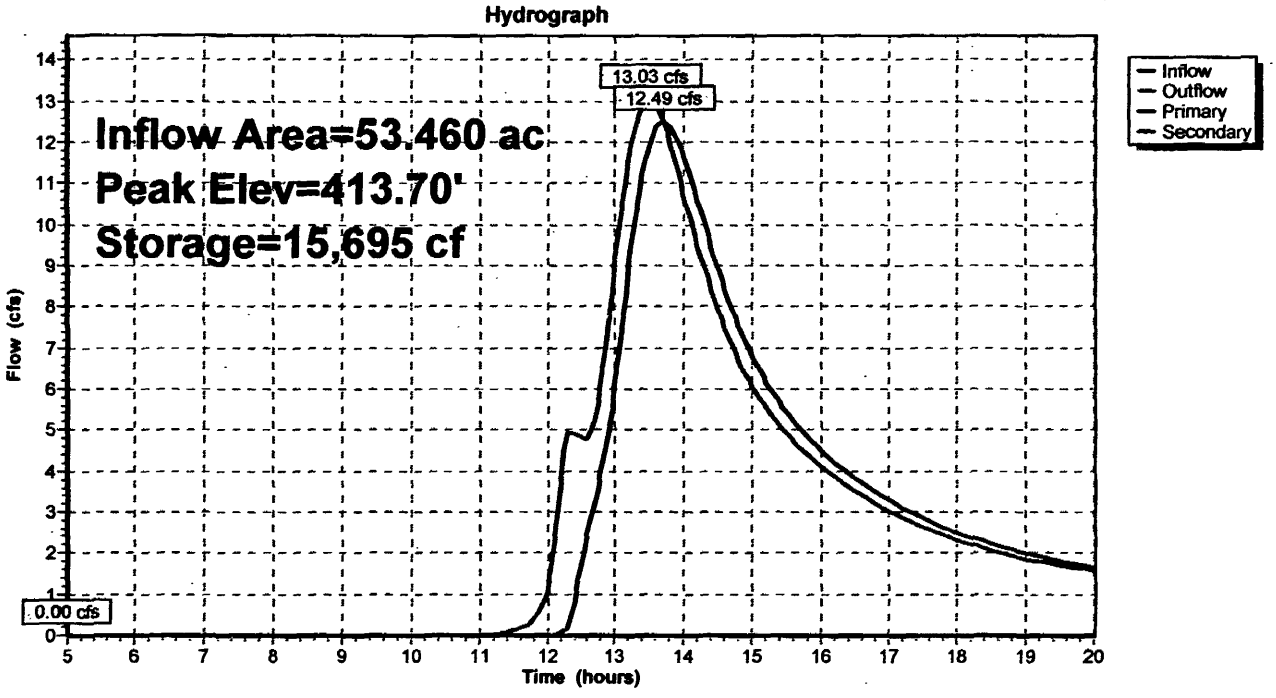
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.80	14,590	551.0	0	0	14,590
414.80	20,589	599.0	35,007	35,007	19,131

#	Routing	Invert	Outlet Devices
1	Primary	413.00'	**8.0' long x 12.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
2	Secondary	413.90'	**90.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=12.49 cfs @ 13.70 hrs HW=413.70' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 12.49 cfs @ 2.2 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=412.80' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 3P: EXISTING POND 3



Subcatchment 1S: DA-2

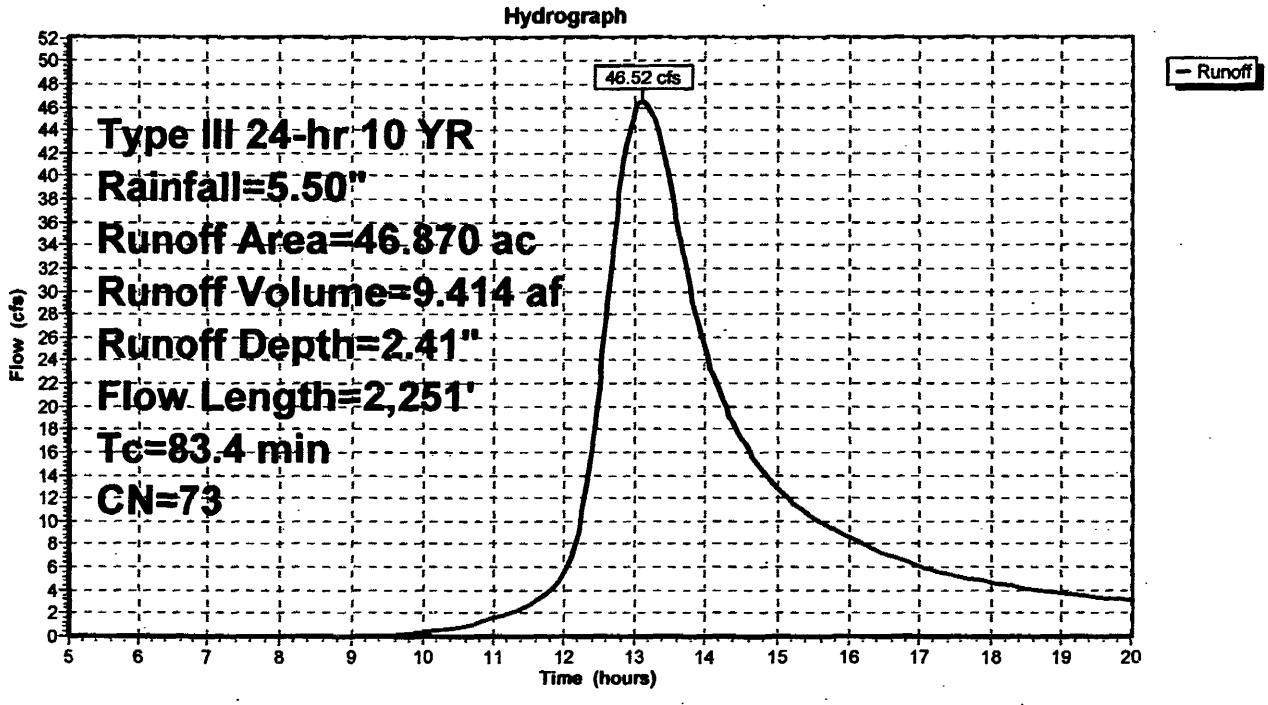
Runoff = 46.52 cfs @ 13.12 hrs, Volume= 9.414 af, Depth= 2.41"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=5.50"

Area (ac)	CN	Description
13.660	65	Brush, Good, HSG C
0.910	98	Paved parking & roofs
18.170	79	1 acre lots, 20% imp, HSG C
11.910	70	Woods, Good, HSG C
0.040	77	Woods, Good, HSG D
2.180	73	Brush, Good, HSG D
46.870	73	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.2	150	0.0193	0.0		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
4.3	96	0.0219	0.4		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.3	203	0.0443	2.7	10.46	**Trap/Vee/Rect Channel Flow,** Bot.W=3.00' D=0.75' Z= 3.0 '/' n= 0.075
14.6	457	0.0438	0.5		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.5	423	0.0330	1.3		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.5	922	0.0263	2.0	8.06	**Trap/Vee/Rect Channel Flow,** Bot.W=3.00' D=0.75' Z= 3.0 '/' n= 0.075
83.4	2,251	Total			

Subcatchment 1S: DA-2



Subcatchment 3S: EXISTING POND 3 DA

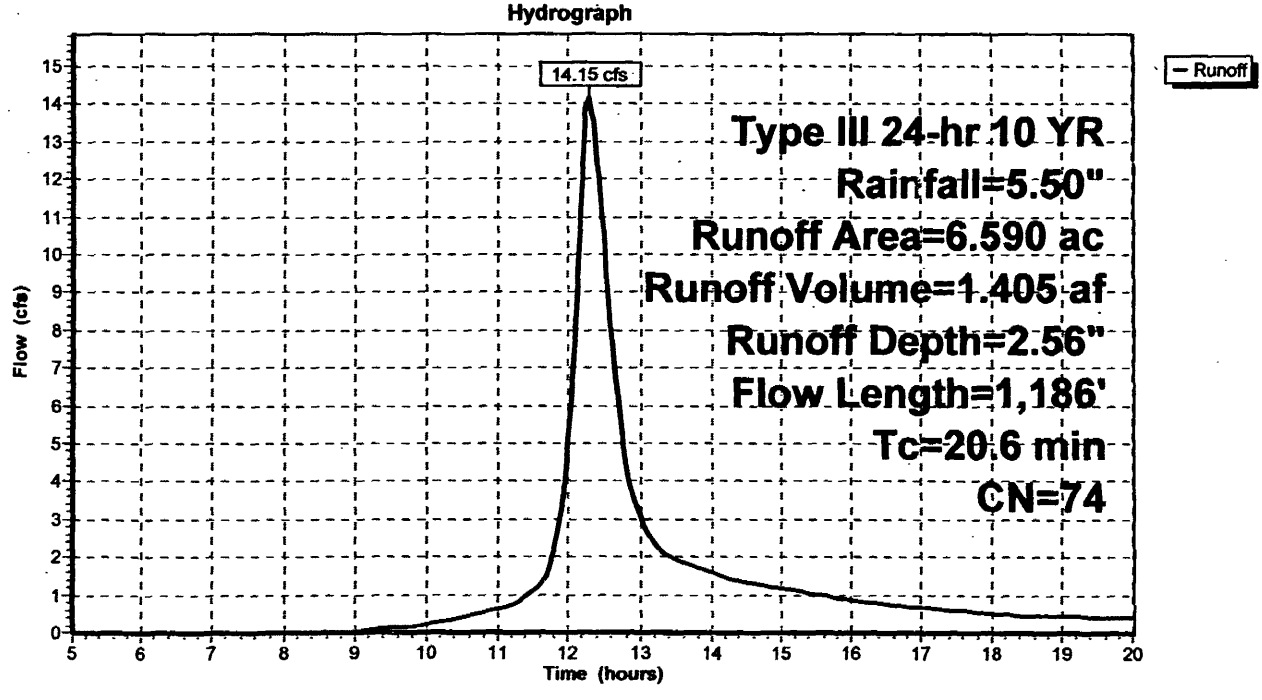
Runoff = 14.15 cfs @ 12.29 hrs, Volume= 1.405 af, Depth= 2.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=5.50"

Area (ac)	CN	Description
2.020	65	Brush, Good, HSG C
1.930	73	Brush, Good, HSG D
0.590	98	Paved parking & roofs
1.880	79	1 acre lots, 20% imp, HSG C
0.170	70	Woods, Good, HSG C
6.590	74	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1600	0.4		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.50"
7.5	801	0.0650	1.8		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.0	285	0.0030	0.5	0.92	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.50' Z= 3.0 '/' n= 0.075
20.6	1,186	Total			

Subcatchment 3S: EXISTING POND 3 DA



Pond 2P: EXISTING POND 2

Inflow Area = 46.870 ac, Inflow Depth = 2.41" for 10 YR event
Inflow = 46.52 cfs @ 13.12 hrs, Volume= 9.414 af
Outflow = 34.30 cfs @ 13.66 hrs, Volume= 9.272 af, Atten= 26%, Lag= 32.4 min
Primary = 33.94 cfs @ 13.67 hrs, Volume= 9.268 af
Secondary = 0.36 cfs @ 13.66 hrs, Volume= 0.004 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 417.01' @ 13.67 hrs Surf.Area= 40,564 sf Storage= 65,859 cf
Plug-Flow detention time= 25.9 min calculated for 9.241 af (98% of inflow)
Center-of-Mass det. time= 21.0 min (878.8 - 857.8)

#	Invert	Avail.Storage	Storage Description
1	413.70'	104,479 cf	**Custom Stage Data (Irregular)** Listed below

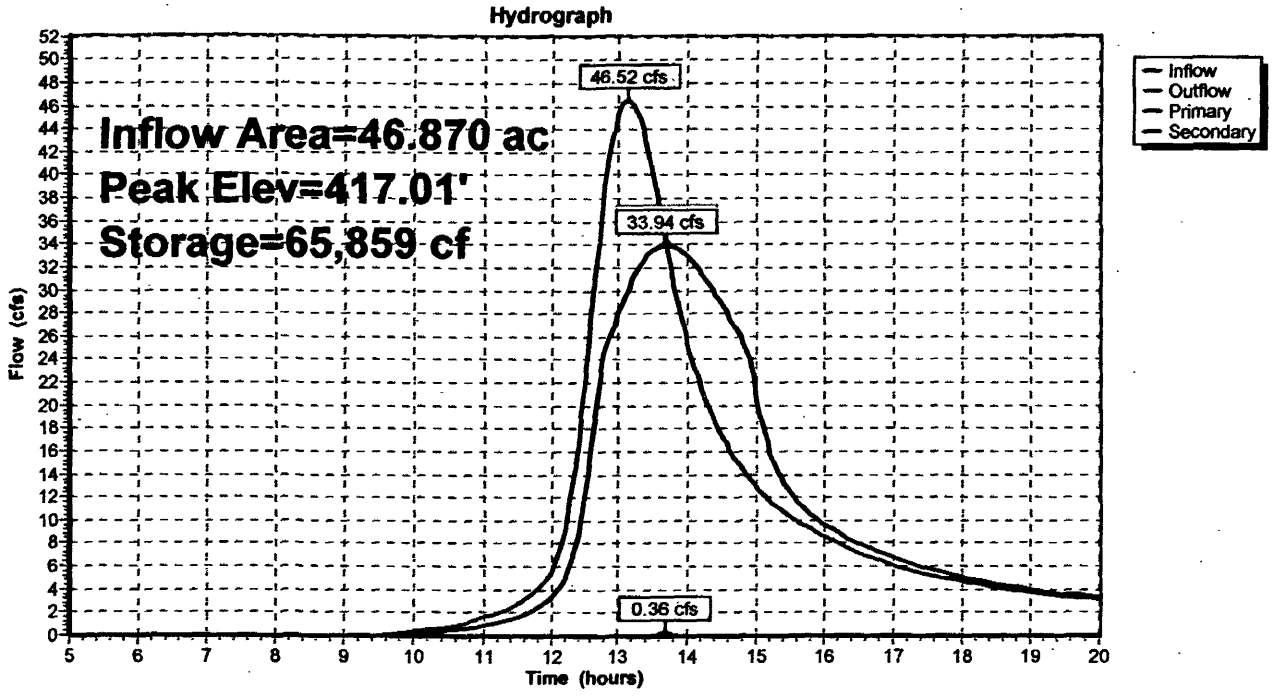
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
413.70	2,844	271.0	0	0	2,844
414.00	4,044	439.0	1,028	1,028	12,337
416.00	23,835	1,031.0	25,131	26,159	81,604
418.00	56,838	1,236.0	78,320	104,479	118,656

#	Routing	Invert	Outlet Devices
1	Primary	413.70'	**30.0" x 35.0' long Culvert** CMP, square edge headwall, Ke= 0.500 Outlet Invert= 412.80' S= 0.0257 '/' n= 0.021 Cc= 0.900
2	Secondary	417.00'	**75.0' long x 14.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63

Primary OutFlow Max=33.95 cfs @ 13.67 hrs HW=417.01' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 33.95 cfs @ 6.9 fps)

Secondary OutFlow Max=0.30 cfs @ 13.66 hrs HW=417.01' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.30 cfs @ 0.3 fps)

Pond 2P: EXISTING POND 2



Pond 3P: EXISTING POND 3

Inflow Area = 53.460 ac, Inflow Depth = 2.40" for 10 YR event
Inflow = 36.09 cfs @ 13.66 hrs, Volume= 10.677 af
Outflow = 36.04 cfs @ 13.69 hrs, Volume= 10.466 af, Atten= 0%, Lag= 1.8 min
Primary = 22.74 cfs @ 13.69 hrs, Volume= 8.498 af
Secondary = 13.30 cfs @ 13.69 hrs, Volume= 1.967 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 414.04' @ 13.69 hrs Surf.Area= 18,324 sf Storage= 21,787 cf
Plug-Flow detention time= 16.7 min calculated for 10.466 af (98% of inflow)
Center-of-Mass det. time= 10.6 min (880.0 - 869.4)

#	Invert	Avail.Storage	Storage Description
1	412.80'	35,007 cf	**Custom Stage Data (Irregular)** Listed below

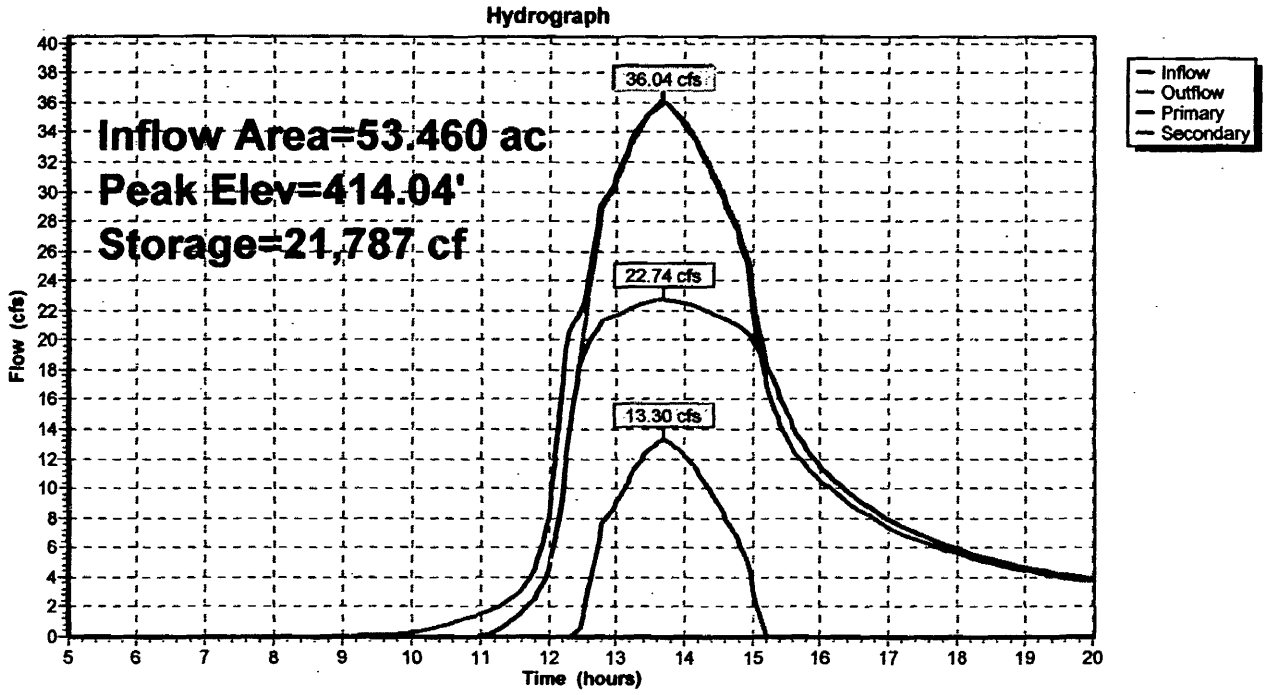
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.80	14,590	551.0	0	0	14,590
414.80	20,589	599.0	35,007	35,007	19,131

#	Routing	Invert	Outlet Devices
1	Primary	413.00'	**8.0' long x 12.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
2	Secondary	413.90'	**90.0' long x 15.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=22.74 cfs @ 13.69 hrs HW=414.04' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 22.74 cfs @ 2.7 fps)

Secondary OutFlow Max=13.26 cfs @ 13.69 hrs HW=414.04' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 13.26 cfs @ 1.0 fps)

Pond 3P: EXISTING POND 3



Subcatchment 1S: DA-2

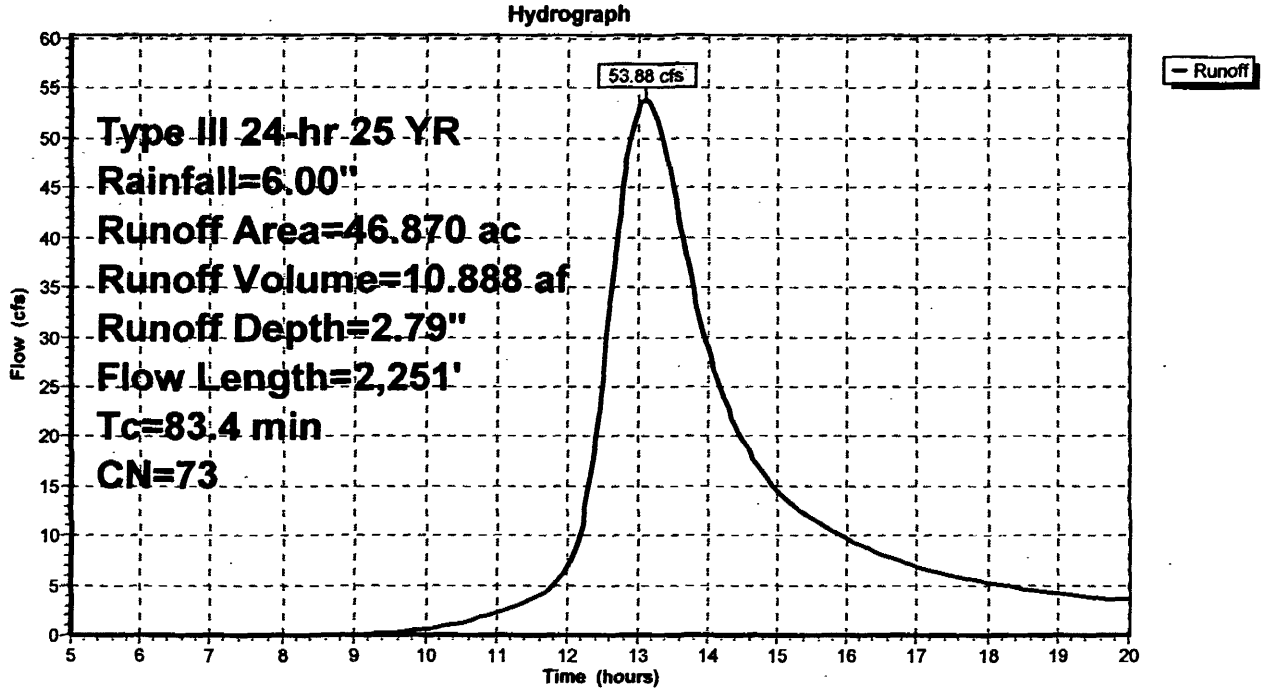
Runoff = 53.88 cfs @ 13.12 hrs, Volume= 10.888 af, Depth= 2.79"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=6.00"

Area (ac)	CN	Description
13.660	65	Brush, Good, HSG C
0.910	98	Paved parking & roofs
18.170	79	1 acre lots, 20% imp, HSG C
11.910	70	Woods, Good, HSG C
0.040	77	Woods, Good, HSG D
2.180	73	Brush, Good, HSG D
46.870	73	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.2	150	0.0193	0.0		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
4.3	96	0.0219	0.4		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.3	203	0.0443	2.7	10.46	**Trap/Vee/Rect Channel Flow,** Bot.W=3.00' D=0.75' Z= 3.0 '/' n= 0.075
14.6	457	0.0438	0.5		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.5	423	0.0330	1.3		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.5	922	0.0263	2.0	8.06	**Trap/Vee/Rect Channel Flow,** Bot.W=3.00' D=0.75' Z= 3.0 '/' n= 0.075
83.4	2,251	Total			

Subcatchment 1S: DA-2



Subcatchment 3S: EXISTING POND 3 DA

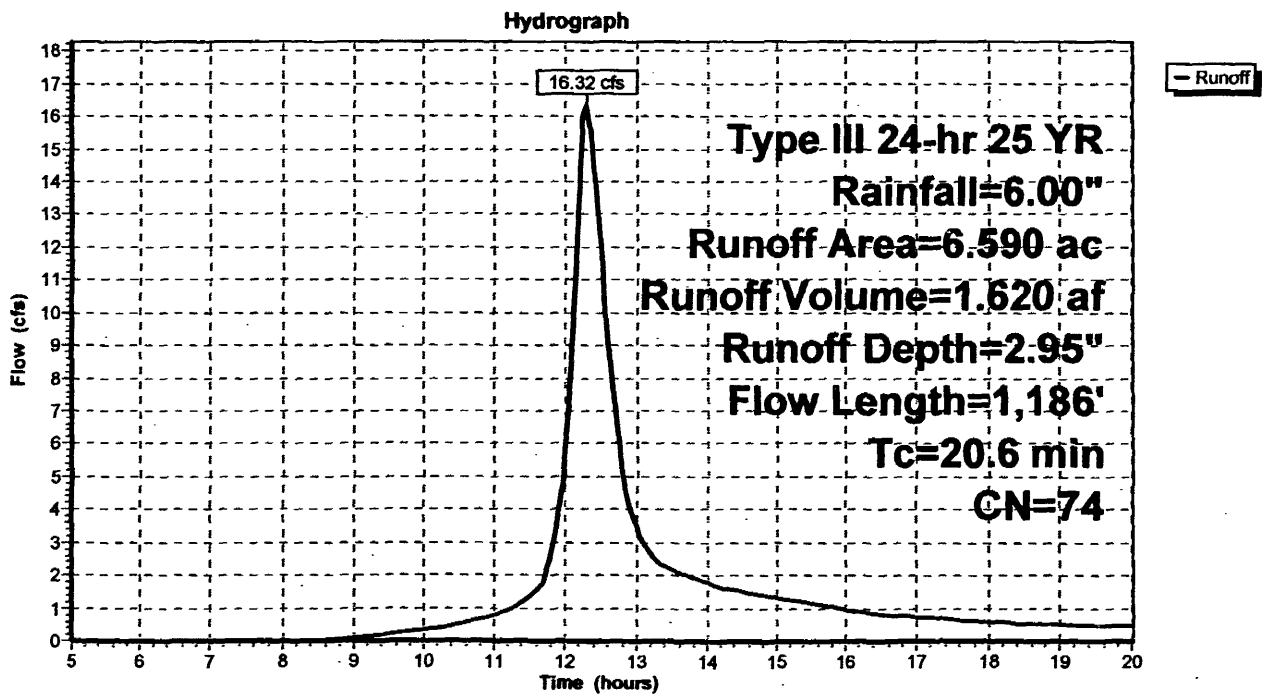
Runoff = 16.32 cfs @ 12.29 hrs, Volume= 1.620 af, Depth= 2.95"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=6.00"

Area (ac)	CN	Description
2.020	65	Brush, Good, HSG C
1.930	73	Brush, Good, HSG D
0.590	98	Paved parking & roofs
1.880	79	1 acre lots, 20% imp, HSG C
0.170	70	Woods, Good, HSG C
6.590	74	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1600	0.4		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.50"
7.5	801	0.0650	1.8		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.0	285	0.0030	0.5	0.92	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.50' Z= 3.0 '/' n= 0.075
20.6	1,186	Total			

Subcatchment 3S: EXISTING POND 3 DA



Pond 2P: EXISTING POND 2

Inflow Area = 46.870 ac, Inflow Depth = 2.79" for 25 YR event
Inflow = 53.88 cfs @ 13.12 hrs, Volume= 10.888 af
Outflow = 48.13 cfs @ 13.43 hrs, Volume= 10.733 af, Atten= 11%, Lag= 19.2 min
Primary = 35.10 cfs @ 13.43 hrs, Volume= 10.274 af
Secondary = 13.03 cfs @ 13.43 hrs, Volume= 0.460 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 417.16' @ 13.43 hrs Surf.Area= 43,014 sf Storage= 71,673 cf
Plug-Flow detention time= 25.7 min calculated for 10.733 af (99% of inflow)
Center-of-Mass det. time= 20.9 min (875.7 - 854.8)

#	Invert	Avail.Storage	Storage Description
1	413.70'	104,479 cf	**Custom Stage Data (Irregular)** Listed below

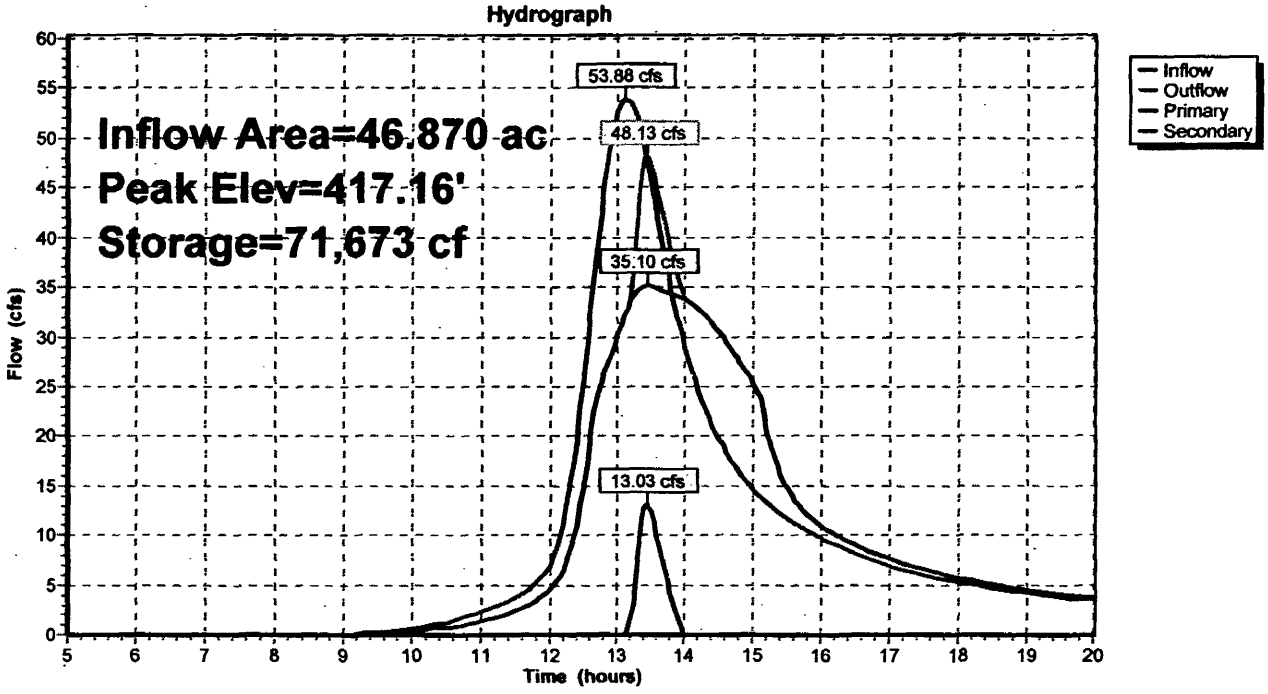
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
413.70	2,844	271.0	0	0	2,844
414.00	4,044	439.0	1,028	1,028	12,337
416.00	23,835	1,031.0	25,131	26,159	81,604
418.00	56,838	1,236.0	78,320	104,479	118,656

#	Routing	Invert	Outlet Devices
1	Primary	413.70'	**30.0" x 35.0' long Culvert** CMP, square edge headwall, Ke= 0.500 Outlet Invert= 412.80' S= 0.0257 '/' n= 0.021 Cc= 0.900
2	Secondary	417.00'	**75.0' long x 14.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63

Primary OutFlow Max=35.09 cfs @ 13.43 hrs HW=417.16' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 35.09 cfs @ 7.1 fps)

Secondary OutFlow Max=12.85 cfs @ 13.43 hrs HW=417.16' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 12.85 cfs @ 1.1 fps)

Pond 2P: EXISTING POND 2



Pond 3P: EXISTING POND 3

Inflow Area = 53.460 ac, Inflow Depth = 2.77" for 25 YR event
Inflow = 50.35 cfs @ 13.43 hrs, Volume= 12.353 af
Outflow = 50.27 cfs @ 13.46 hrs, Volume= 12.133 af, Atten= 0%, Lag= 1.7 min
Primary = 25.29 cfs @ 13.46 hrs, Volume= 9.299 af
Secondary = 24.97 cfs @ 13.46 hrs, Volume= 2.833 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 414.12' @ 13.46 hrs Surf.Area= 18,550 sf Storage= 23,111 cf
Plug-Flow detention time= 15.4 min calculated for 12.133 af (98% of inflow)
Center-of-Mass det. time= 9.8 min (876.2 - 866.4)

#	Invert	Avail.Storage	Storage Description
1	412.80'	35,007 cf	**Custom Stage Data (Irregular)** Listed below

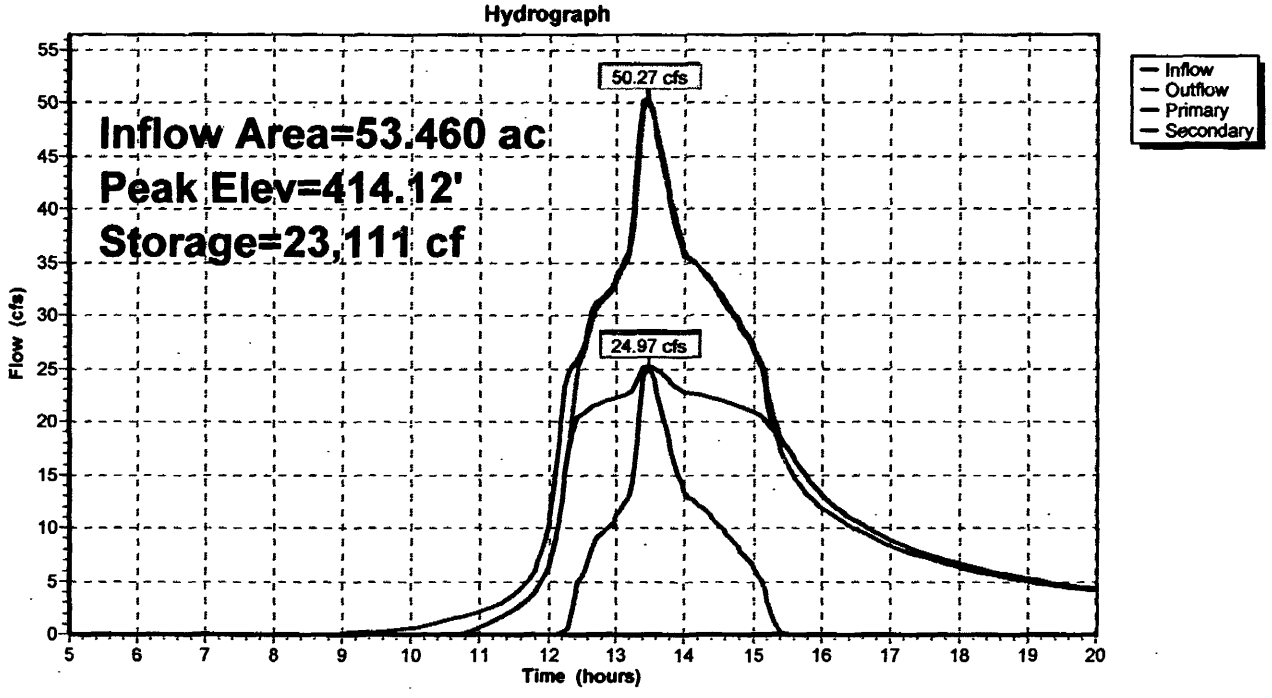
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.80	14,590	551.0	0	0	14,590
414.80	20,589	599.0	35,007	35,007	19,131

#	Routing	Invert	Outlet Devices
1	Primary	413.00'	**8.0' long x 12.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
2	Secondary	413.90'	**90.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=25.28 cfs @ 13.46 hrs HW=414.12' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 25.28 cfs @ 2.8 fps)

Secondary OutFlow Max=24.89 cfs @ 13.46 hrs HW=414.12' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 24.89 cfs @ 1.3 fps)

Pond 3P: EXISTING POND 3



Subcatchment 1S: DA-2

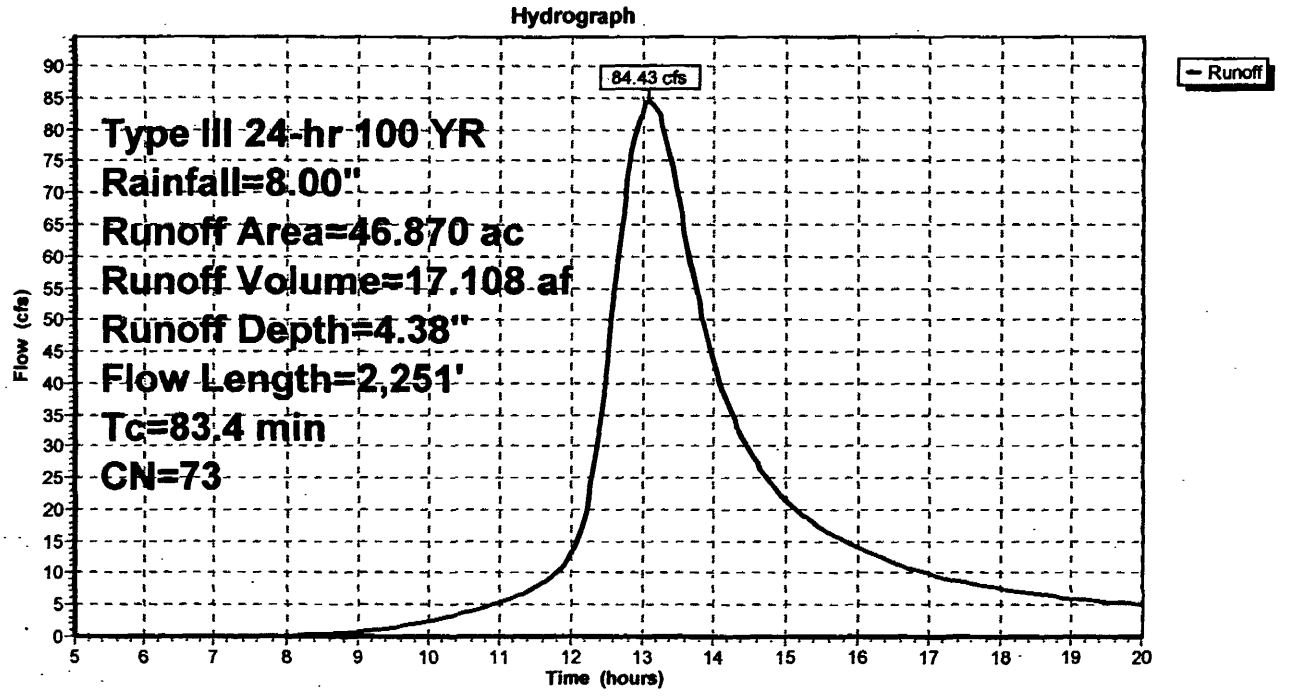
Runoff = 84.43 cfs @ 13.09 hrs, Volume= 17.108 af, Depth= 4.38"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.00"

Area (ac)	CN	Description
13.660	65	Brush, Good, HSG C
0.910	98	Paved parking & roofs
18.170	79	1 acre lots, 20% imp, HSG C
11.910	70	Woods, Good, HSG C
0.040	77	Woods, Good, HSG D
2.180	73	Brush, Good, HSG D
46.870	73	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.2	150	0.0193	0.0		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
4.3	96	0.0219	0.4		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.3	203	0.0443	2.7	10.46	**Trap/Vee/Rect Channel Flow,** Bot.W=3.00' D=0.75' Z= 3.0 '/' n= 0.075
14.6	457	0.0438	0.5		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.5	423	0.0330	1.3		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.5	922	0.0263	2.0	8.06	**Trap/Vee/Rect Channel Flow,** Bot.W=3.00' D=0.75' Z= 3.0 '/' n= 0.075
83.4	2,251	Total			

Subcatchment 1S: DA-2



Subcatchment 3S: EXISTING POND 3 DA

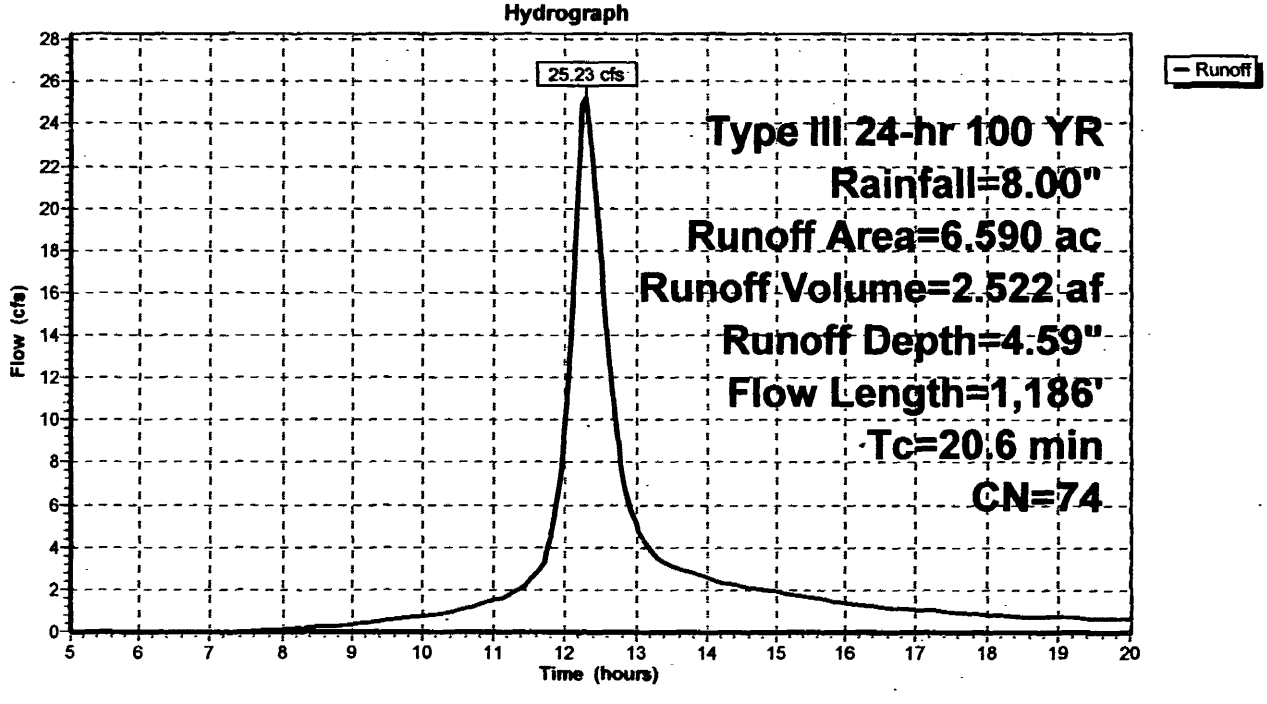
Runoff = 25.23 cfs @ 12.28 hrs, Volume= 2.522 af, Depth= 4.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.00"

Area (ac)	CN	Description
2.020	65	Brush, Good, HSG C
1.930	73	Brush, Good, HSG D
0.590	98	Paved parking & roofs
1.880	79	1 acre lots, 20% imp, HSG C
0.170	70	Woods, Good, HSG C
6.590	74	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	100	0.1600	0.4		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.50"
7.5	801	0.0650	1.8		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.0	285	0.0030	0.5	0.92	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.50' Z= 3.0 '/' n= 0.075
20.6	1,186	Total			

Subcatchment 3S: EXISTING POND 3 DA



Pond 2P: EXISTING POND 2

Inflow Area = 46.870 ac, Inflow Depth = 4.38" for 100 YR event
Inflow = 84.43 cfs @ 13.09 hrs, Volume= 17.108 af
Outflow = 83.85 cfs @ 13.17 hrs, Volume= 16.908 af, Atten= 1%, Lag= 4.6 min
Primary = 36.85 cfs @ 13.17 hrs, Volume= 13.593 af
Secondary = 47.00 cfs @ 13.17 hrs, Volume= 3.315 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 417.38' @ 13.17 hrs Surf.Area= 46,615 sf Storage= 80,217 cf
Plug-Flow detention time= 22.6 min calculated for 16.908 af (99% of inflow)
Center-of-Mass det. time= 18.6 min (863.8 - 845.2)

#	Invert	Avail.Storage	Storage Description
1	413.70'	104,479 cf	**Custom Stage Data (Irregular)** Listed below

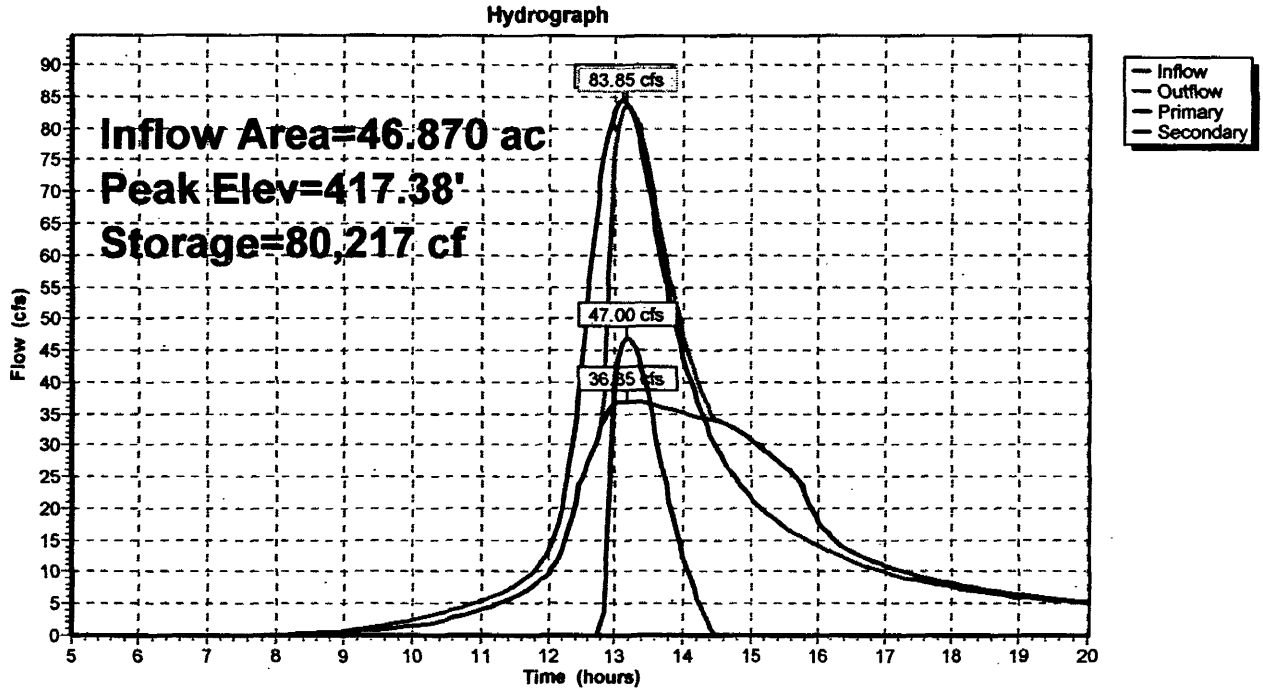
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
413.70	2,844	271.0	0	0	2,844
414.00	4,044	439.0	1,028	1,028	12,337
416.00	23,835	1,031.0	25,131	26,159	81,604
418.00	56,838	1,236.0	78,320	104,479	118,656

#	Routing	Invert	Outlet Devices
1	Primary	413.70'	**30.0" x 35.0' long Culvert** CMP, square edge headwall, Ke= 0.500 Outlet Invert= 412.80' S= 0.0257 '/' n= 0.021 Cc= 0.900
2	Secondary	417.00'	**75.0' long x 14.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.64 2.67 2.70 2.65 2.64 2.65 2.65 2.63

Primary OutFlow Max=36.84 cfs @ 13.17 hrs HW=417.38' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 36.84 cfs @ 7.5 fps)

Secondary OutFlow Max=46.84 cfs @ 13.17 hrs HW=417.38' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 46.84 cfs @ 1.6 fps)

Pond 2P: EXISTING POND 2



Pond 3P: EXISTING POND 3

Inflow Area = 53.460 ac; Inflow Depth = 4.36" for 100 YR event
Inflow = 87.88 cfs @ 13.16 hrs, Volume= 19.430 af
Outflow = 87.86 cfs @ 13.17 hrs, Volume= 19.174 af, Atten= 0%, Lag= 1.0 min
Primary = 30.90 cfs @ 13.17 hrs, Volume= 12.224 af
Secondary = 56.96 cfs @ 13.17 hrs, Volume= 6.950 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 414.28' @ 13.17 hrs Surf.Area= 19,030 sf Storage= 25,912 cf
Plug-Flow detention time= 11.9 min calculated for 19.174 af (99% of inflow)
Center-of-Mass det. time= 7.6 min (862.3 - 854.7)

#	Invert	Avail.Storage	Storage Description
1	412.80'	35,007 cf	**Custom Stage Data (Irregular)** Listed below

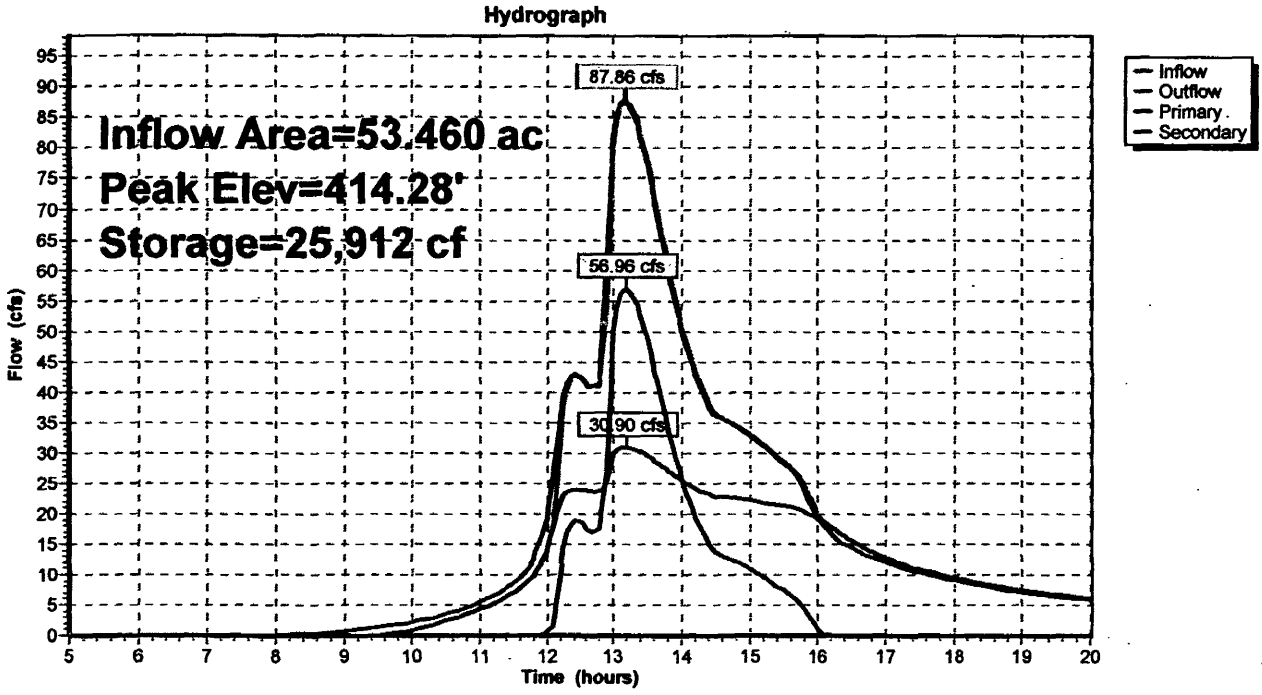
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.80	14,590	551.0	0	0	14,590
414.80	20,589	599.0	35,007	35,007	19,131

#	Routing	Invert	Outlet Devices
1	Primary	413.00'	**8.0' long x 12.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
2	Secondary	413.90'	**90.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=30.88 cfs @ 13.17 hrs HW=414.28' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 30.88 cfs @ 3.0 fps)

Secondary OutFlow Max=56.85 cfs @ 13.17 hrs HW=414.28' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 56.85 cfs @ 1.7 fps)

Pond 3P: EXISTING POND 3



Subcatchment 1S: DA-3

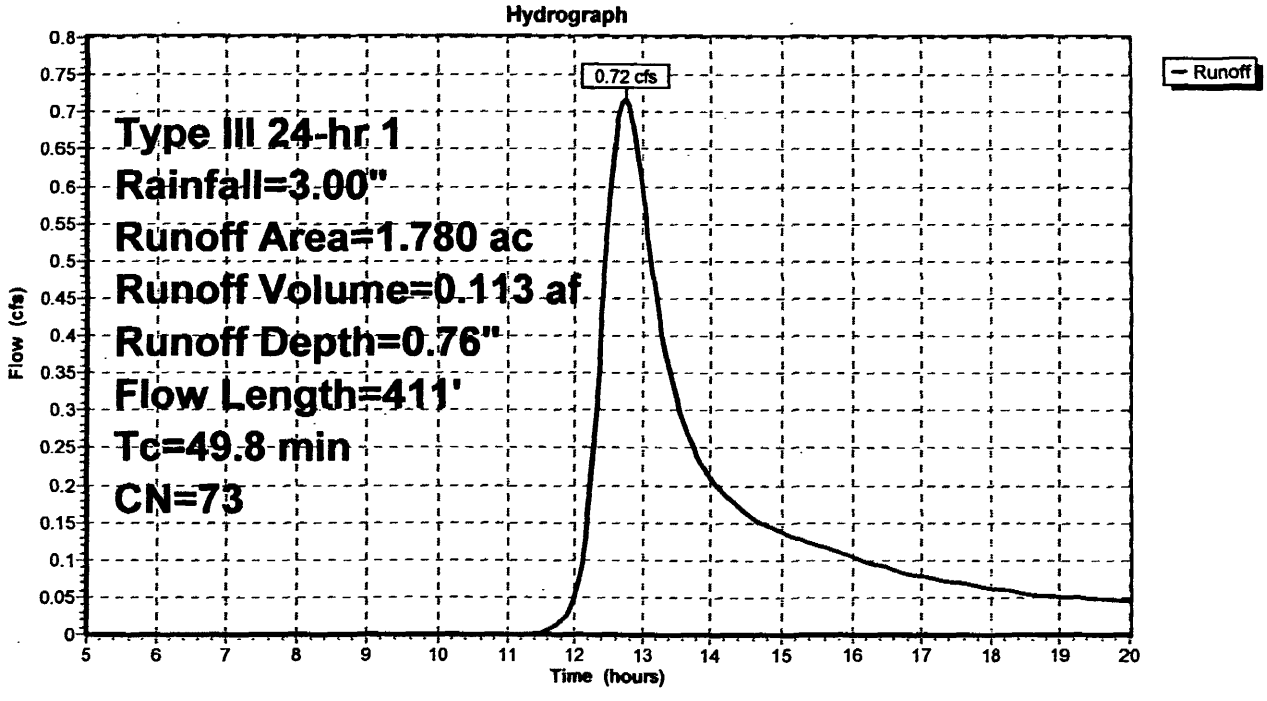
Runoff = 0.72 cfs @ 12.75 hrs, Volume= 0.113 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 Rainfall=3.00"

Area (ac)	CN	Description
0.120	74	>75% Grass cover, Good, HSG C
0.670	70	Woods, Good, HSG C
0.410	65	Brush, Good, HSG C
0.440	79	1 acre lots, 20% imp, HSG C
0.140	89	Gravel roads, HSG C
1.780	73	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.5	150	0.0330	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
6.6	154	0.0060	0.4		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.7	107	0.0090	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
49.8	411	Total			

Subcatchment 1S: DA-3



Subcatchment 1S: DA-3

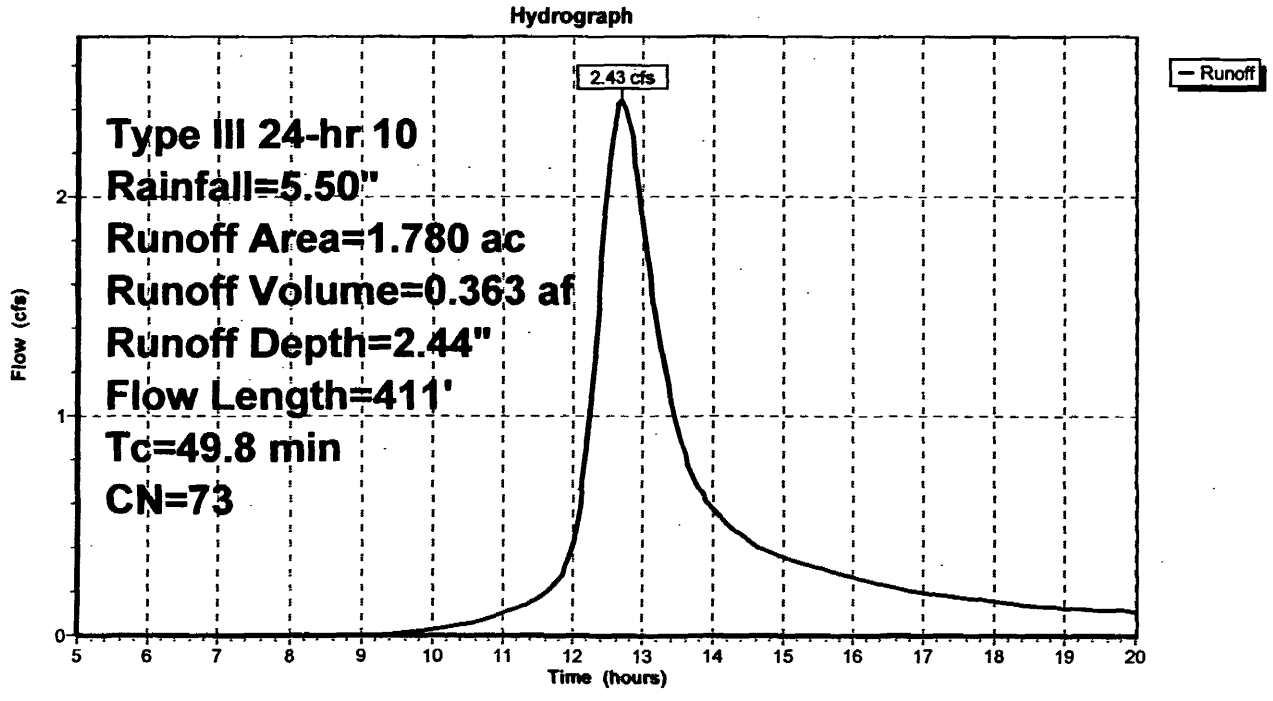
Runoff = 2.43 cfs @ 12.69 hrs, Volume= 0.363 af, Depth= 2.44"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Rainfall=5.50"

Area (ac)	CN	Description
0.120	74	>75% Grass cover, Good, HSG C
0.670	70	Woods, Good, HSG C
0.410	65	Brush, Good, HSG C
0.440	79	1 acre lots, 20% imp, HSG C
0.140	89	Gravel roads, HSG C
1.780	73	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.5	150	0.0330	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
6.6	154	0.0060	0.4		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.7	107	0.0090	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
49.8	411	Total			

Subcatchment 1S: DA-3



Subcatchment 1S: DA-3

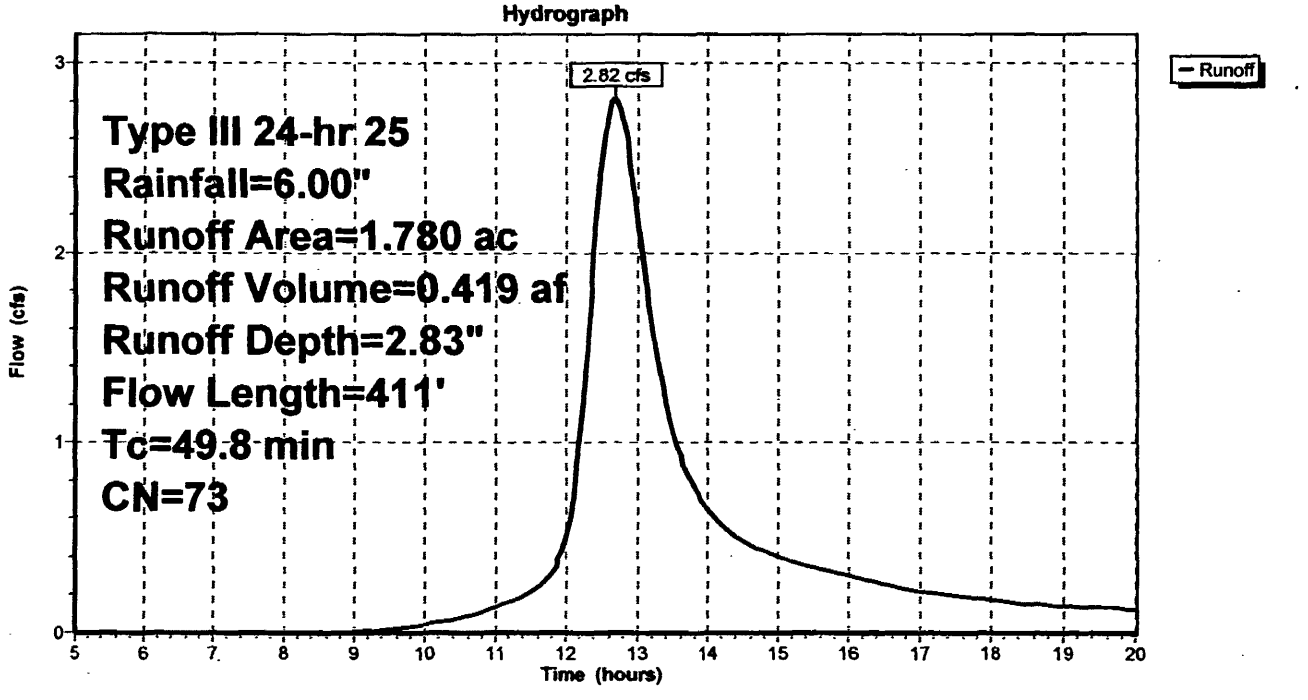
Runoff = 2.82 cfs @ 12.69 hrs, Volume= 0.419 af, Depth= 2.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Rainfall=6.00"

Area (ac)	CN	Description
0.120	74	>75% Grass cover, Good, HSG C
0.670	70	Woods, Good, HSG C
0.410	65	Brush, Good, HSG C
0.440	79	1 acre lots, 20% imp, HSG C
0.140	89	Gravel roads, HSG C
1.780	73	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.5	150	0.0330	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
6.6	154	0.0060	0.4		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.7	107	0.0090	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
49.8	411	Total			

Subcatchment 1S: DA-3



Subcatchment 1S: DA-3

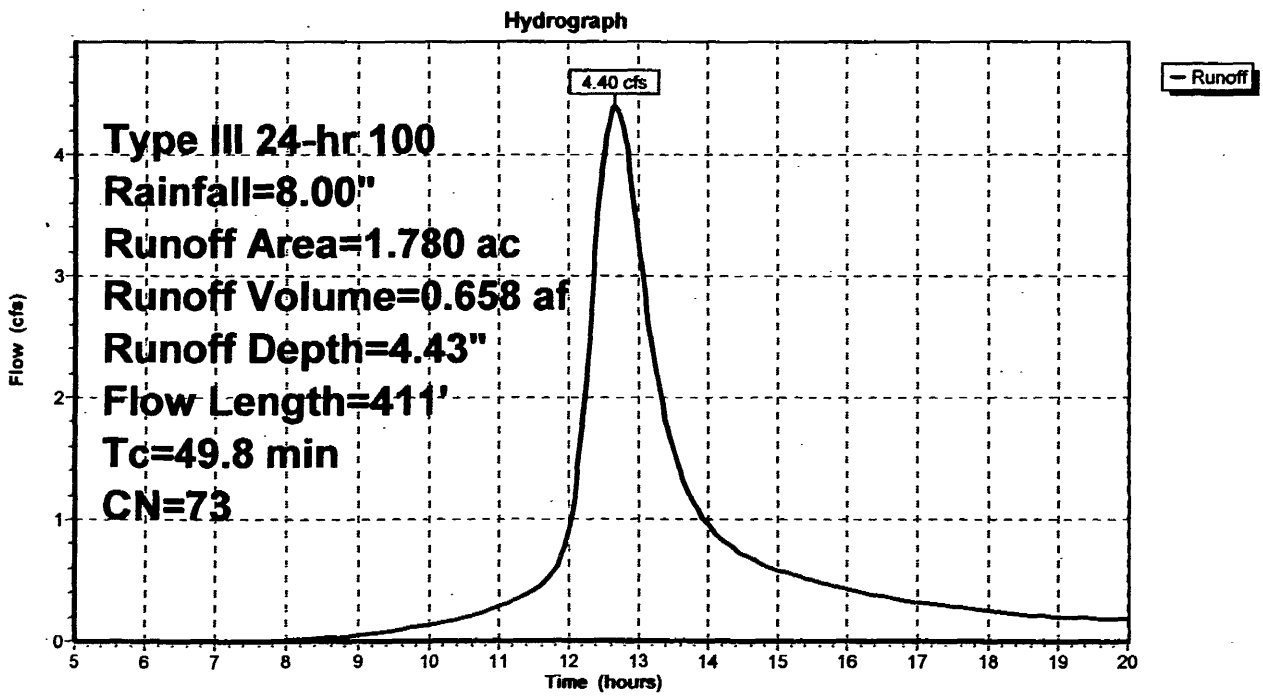
Runoff = 4.40 cfs @ 12.68 hrs, Volume= 0.658 af, Depth= 4.43"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Rainfall=8.00"

Area (ac)	CN	Description
0.120	74	>75% Grass cover, Good, HSG C
0.670	70	Woods, Good, HSG C
0.410	65	Brush, Good, HSG C
0.440	79	1 acre lots, 20% imp, HSG C
0.140	89	Gravel roads, HSG C
1.780	73	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.5	150	0.0330	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
6.6	154	0.0060	0.4		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.7	107	0.0090	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
49.8	411	Total			

Subcatchment 1S: DA-3



APPENDIX B-2

PROPOSED CONDITIONS DRAINAGE CALCULATIONS

Subcatchment 1S: DA-1

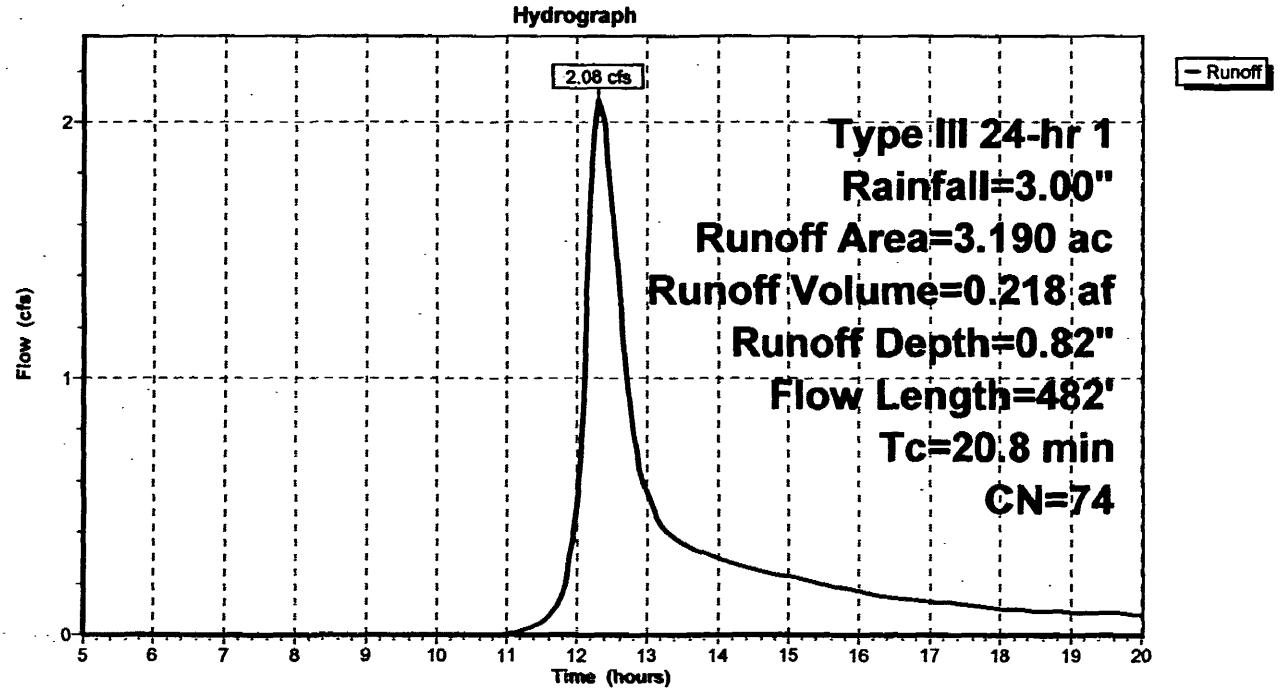
Runoff = 2.08 cfs @ 12.32 hrs, Volume= 0.218 af, Depth= 0.82"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 Rainfall=3.00"

Area (ac)	CN	Description
2.070	74	>75% Grass cover, Good, HSG C
0.940	70	Woods, Good, HSG C
0.180	98	Paved parking & roofs
3.190	74	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	34	0.0590	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
7.4	94	0.0320	0.2		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.50"
2.7	276	0.0580	1.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	78	0.0770	1.4		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.8	482	Total			

Subcatchment 1S: DA-1



Subcatchment 1S: DA-1

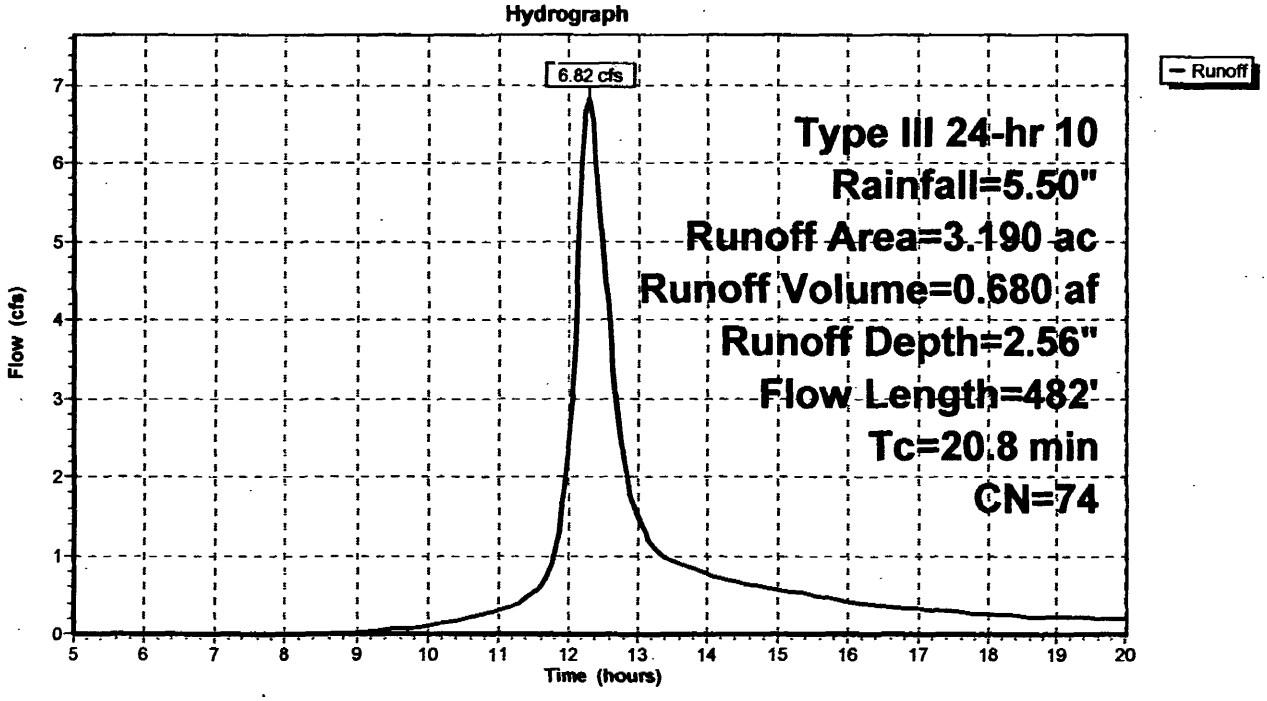
Runoff = 6.82 cfs @ 12.29 hrs, Volume= 0.680 af, Depth= 2.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Rainfall=5.50"

Area (ac)	CN	Description
2.070	74	>75% Grass cover, Good, HSG C
0.940	70	Woods, Good, HSG C
0.180	98	Paved parking & roofs
3.190	74	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	34	0.0590	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
7.4	94	0.0320	0.2		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.50"
2.7	276	0.0580	1.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	78	0.0770	1.4		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.8	482	Total			

Subcatchment 1S: DA-1



Subcatchment 1S: DA-1

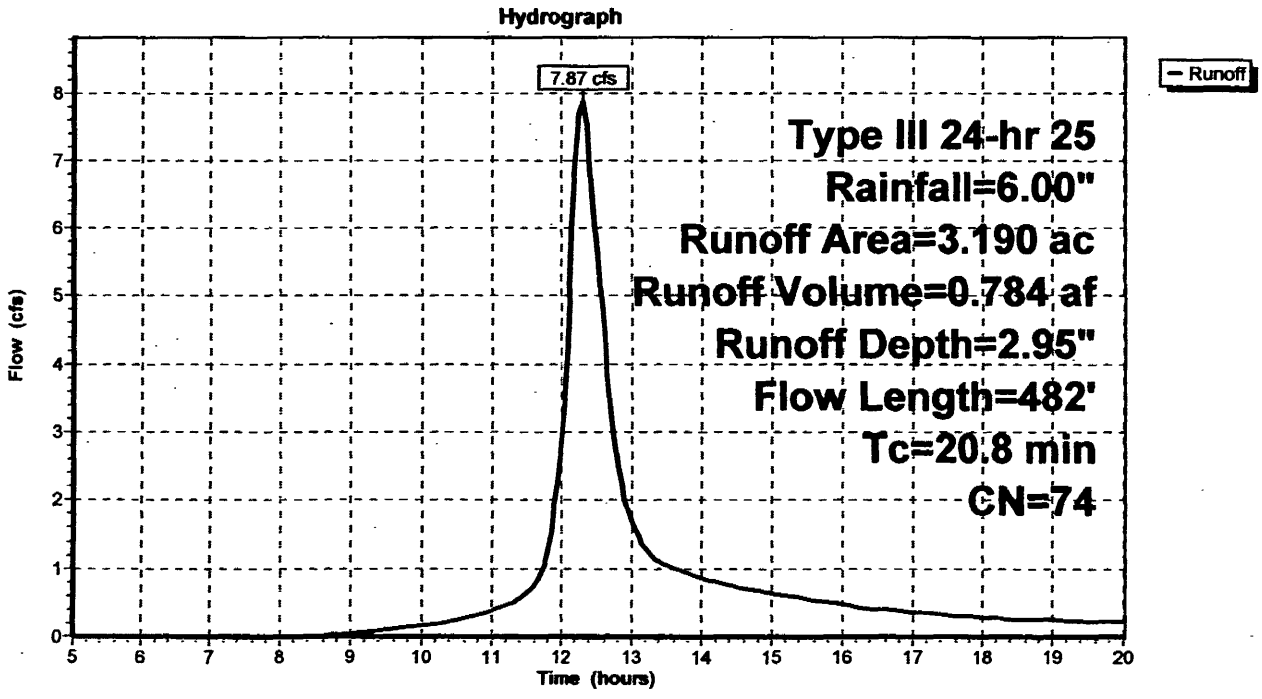
Runoff = 7.87 cfs @ 12.29 hrs, Volume= 0.784 af, Depth= 2.95"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Rainfall=6.00"

Area (ac)	CN	Description
2.070	74	>75% Grass cover, Good, HSG C
0.940	70	Woods, Good, HSG C
0.180	98	Paved parking & roofs
3.190	74	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	34	0.0590	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
7.4	94	0.0320	0.2		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.50"
2.7	276	0.0580	1.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	78	0.0770	1.4		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.8	482	Total			

Subcatchment 1S: DA-1



Subcatchment 1S: DA-1

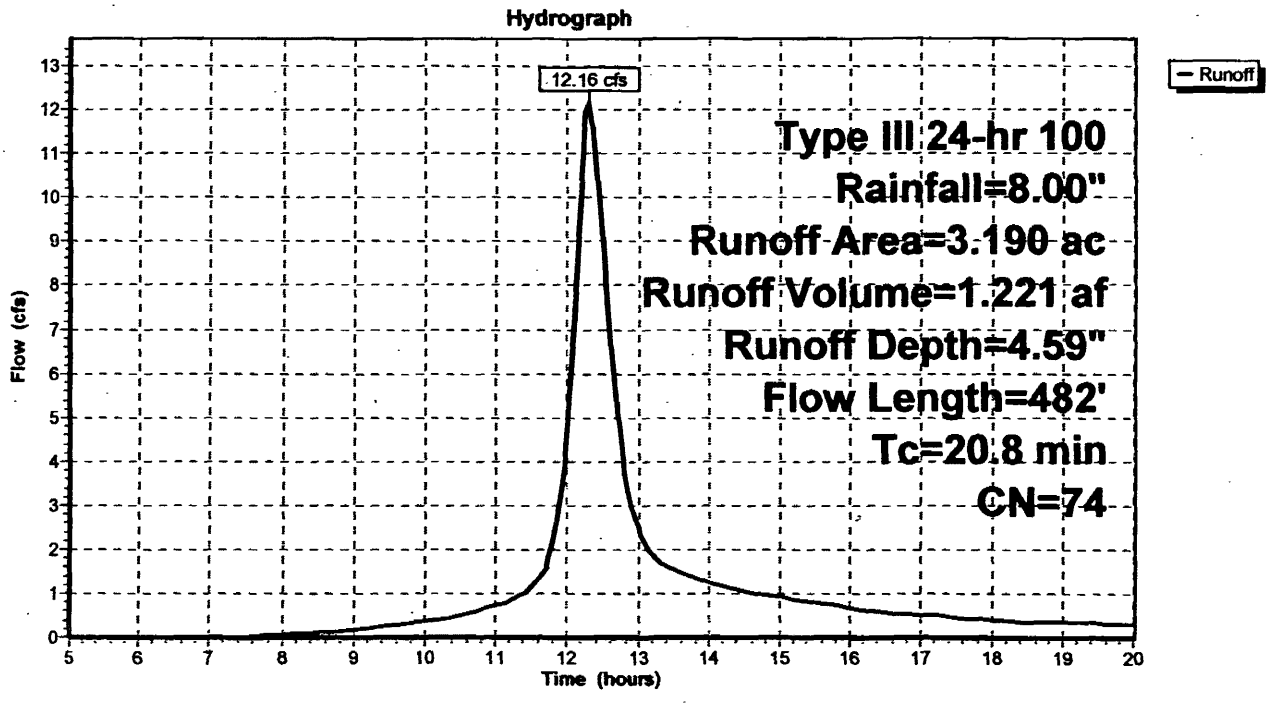
Runoff = 12.16 cfs @ 12.29 hrs, Volume= 1.221 af, Depth= 4.59"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Rainfall=8.00"

Area (ac)	CN	Description
2.070	74	>75% Grass cover, Good, HSG C
0.940	70	Woods, Good, HSG C
0.180	98	Paved parking & roofs
3.190	74	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	34	0.0590	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
7.4	94	0.0320	0.2		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.50"
2.7	276	0.0580	1.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	78	0.0770	1.4		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.8	482	Total			

Subcatchment 1S: DA-1



Subcatchment 1S: POND 1 WQv DA

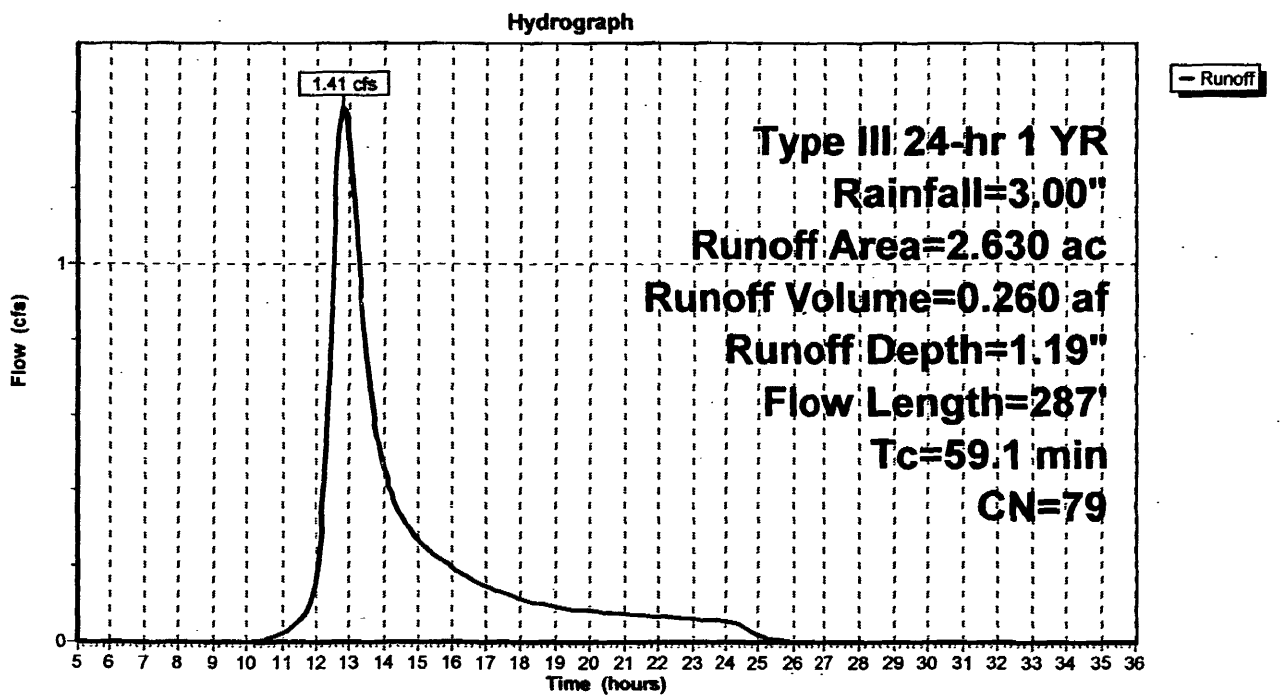
Runoff = 1.41 cfs @ 12.83 hrs, Volume= 0.260 af, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YR Rainfall=3.00"

Area (ac)	CN	Description
0.910	74	>75% Grass cover, Good, HSG C
1.020	70	Woods, Good, HSG C
0.700	98	Paved parking & roofs
2.630	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
43.6	128	0.0200	0.0		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
15.4	103	0.0020	0.1		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	56	0.0660	17.6	21.57	**Circular Channel (pipe),** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
59.1	287	Total			

Subcatchment 1S: POND 1 WQv DA



Subcatchment 1U: ONSITE UNTREATED

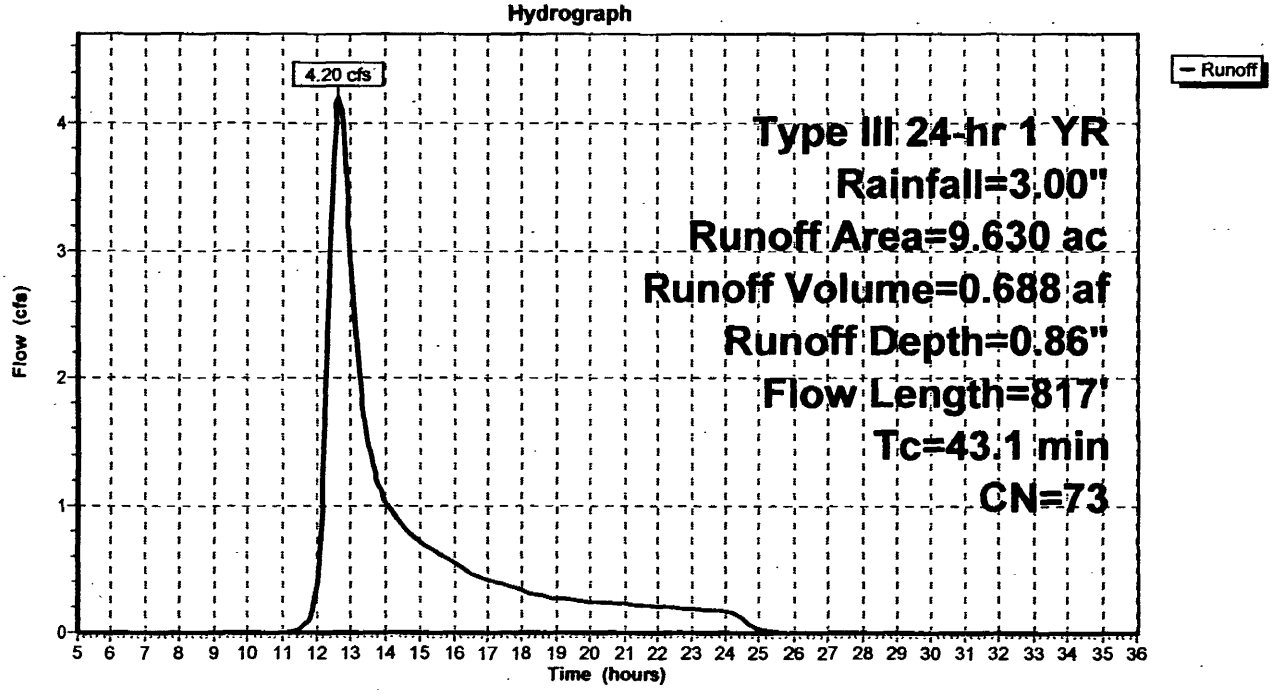
Runoff = 4.20 cfs @ 12.65 hrs, Volume= 0.688 af, Depth= 0.86"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YR Rainfall=3.00"

Area (ac)	CN	Description
4.410	74	>75% Grass cover, Good, HSG C
0.410	80	>75% Grass cover, Good, HSG D
1.170	70	Woods, Good, HSG C
0.020	77	Woods, Good, HSG D
2.430	65	Brush, Good, HSG C
0.590	73	Brush, Good, HSG D
0.600	98	Paved parking & roofs
9.630	73	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	130	0.0346	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
0.4	38	0.0657	1.8		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.3	649	0.0151	1.5	4.71	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.75' Z= 3.0 '/' n= 0.075
43.1	817	Total			

Subcatchment 1U: ONSITE UNTREATED



Subcatchment 2S: POND 2 WQv DA

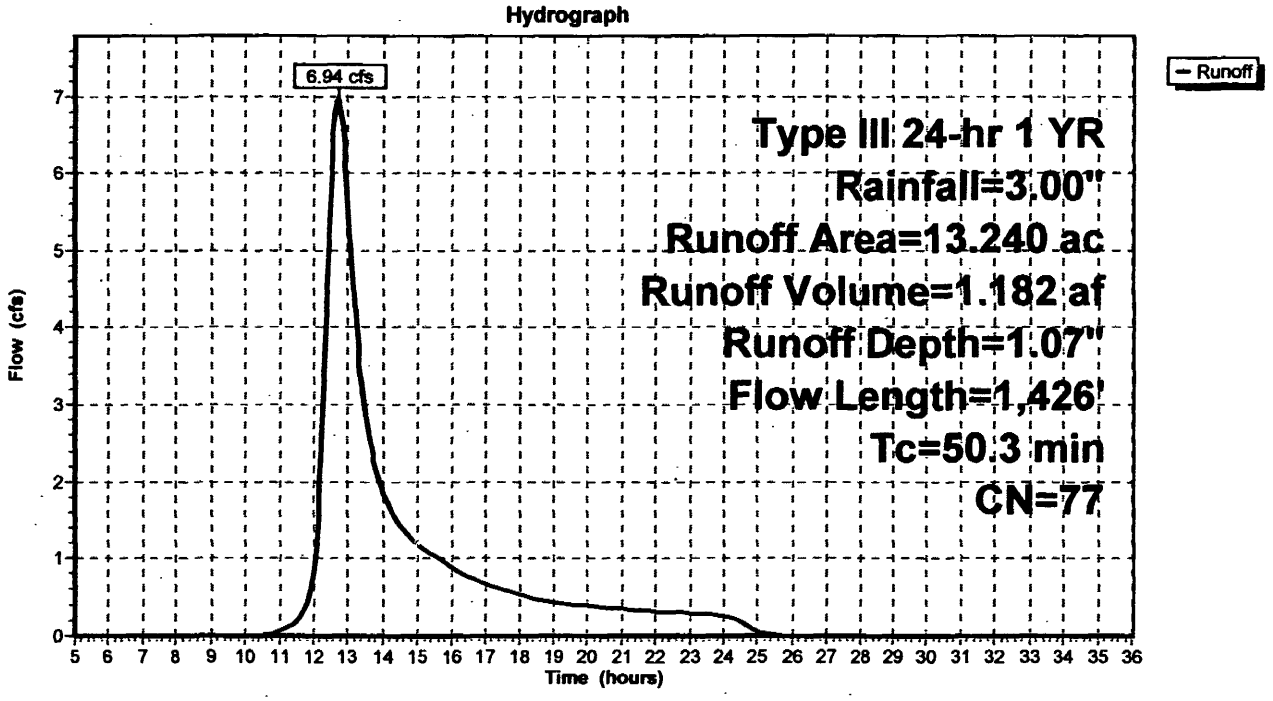
Runoff = 6.94 cfs @ 12.72 hrs, Volume= 1.182 af, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YR Rainfall=3.00"

Area (ac)	CN	Description
5.190	74	>75% Grass cover, Good, HSG C
1.020	80	>75% Grass cover, Good, HSG D
1.280	70	Woods, Good, HSG C
0.480	65	Brush, Good, HSG C
0.080	73	Brush, Good, HSG D
3.940	79	1 acre lots, 20% imp, HSG C (OFF SITE ONLY)
1.250	98	Paved parking & roofs
13.240	77	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.7	130	0.0230	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
0.8	102	0.1030	2.2		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	76	0.0250	0.8		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.0	366	0.0300	1.2		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	752	0.0266	10.5	18.56	**Circular Channel (pipe),** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
50.3	1,426	Total			

Subcatchment 2S: POND 2 WQv DA



Subcatchment 2U: OFFSITE UNTREATED

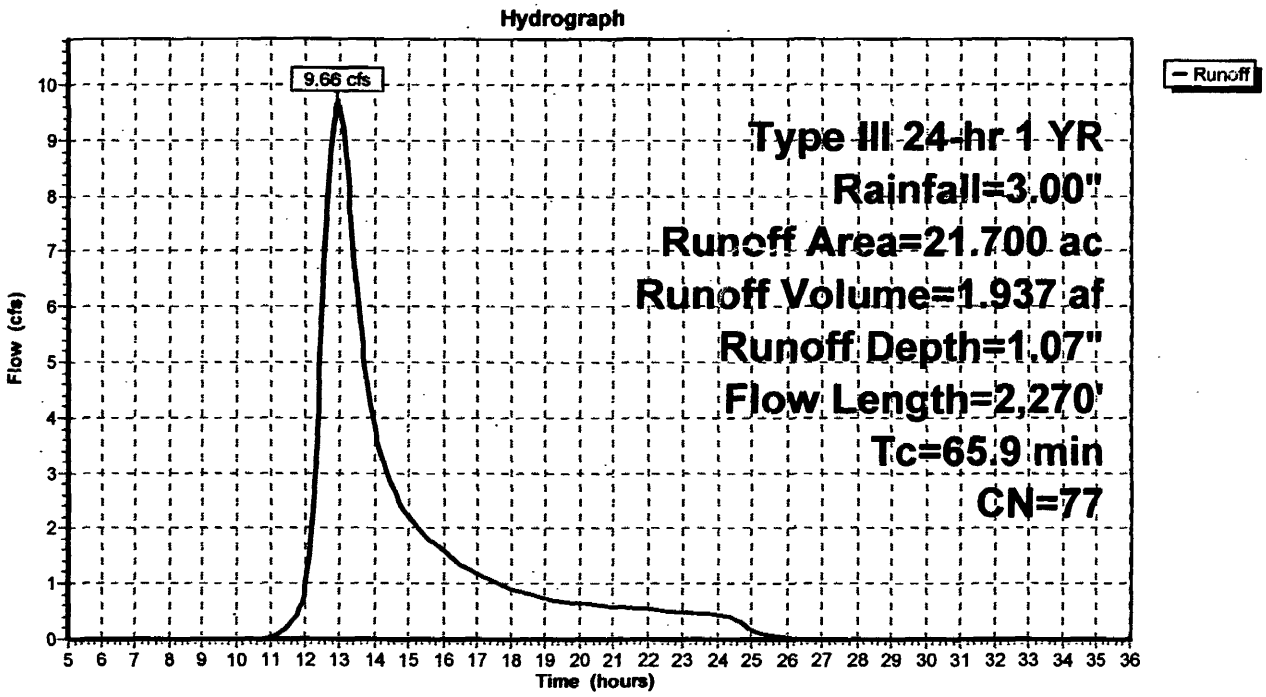
Runoff = 9.66 cfs @ 12.94 hrs, Volume= 1.937 af, Depth= 1.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YR Rainfall=3.00"

Area (ac)	CN	Description
0.900	74	>75% Grass cover, Good, HSG C
5.900	70	Woods, Good, HSG C
14.200	79	1 acre lots, 20% imp, HSG C
0.700	98	Paved parking & roofs
21.700	77	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.0	137	0.0200	0.0		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
5.5	100	0.0146	0.3		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.3	667	0.0480	2.1	3.69	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.50' Z= 3.0 '/' n= 0.075
5.2	551	0.0335	1.8	3.09	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.50' Z= 3.0 '/' n= 0.075
0.4	470	0.0255	18.1	174.05	**Circular Channel (pipe),** Diam= 42.0" Area= 9.6 sf Perim= 11.0' r= 0.88' n= 0.012
3.5	345	0.0168	1.6	6.44	**Trap/Vee/Rect Channel Flow,** Bot.W=3.00' D=0.75' Z= 3.0 '/' n= 0.075
65.9	2,270	Total			

Subcatchment 2U: OFFSITE UNTREATED



Subcatchment 3S: POND 3 DA

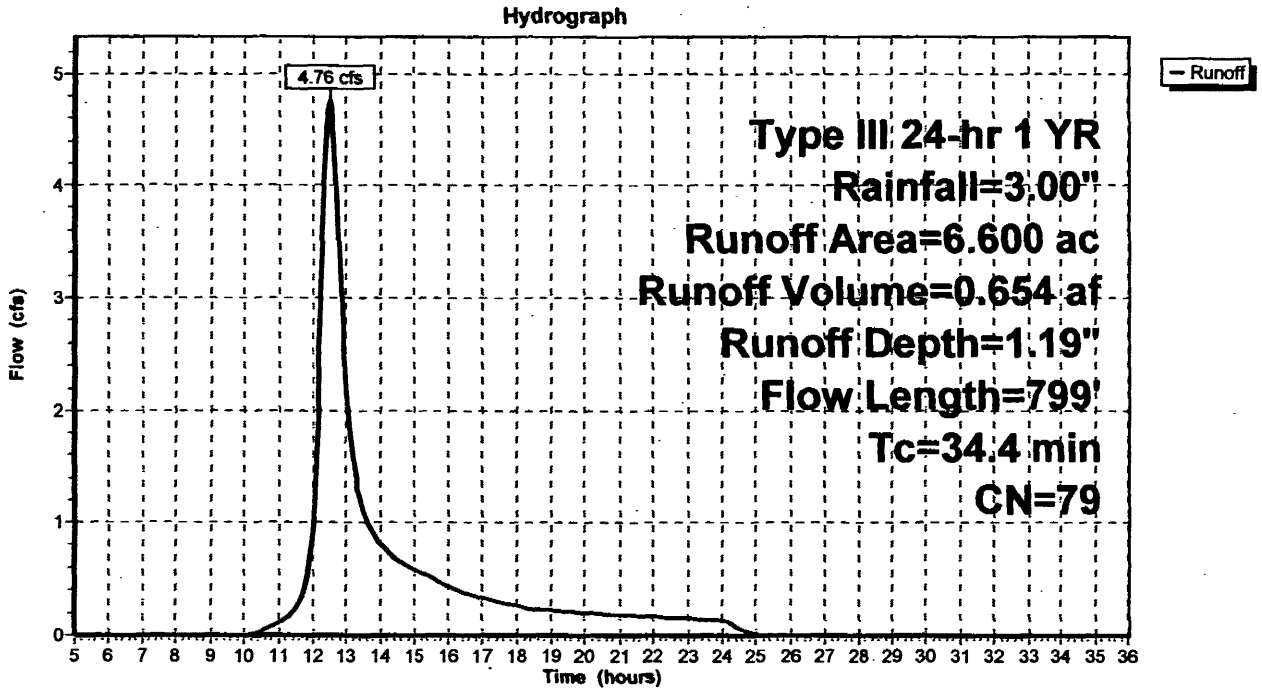
Runoff = 4.76 cfs @ 12.50 hrs, Volume= 0.654 af, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 YR Rainfall=3.00"

Area (ac)	CN	Description
2.270	74	>75% Grass cover, Good, HSG C
1.570	80	>75% Grass cover, Good, HSG D
0.170	70	Woods, Good, HSG C
1.890	79	1 acre lots, 20% imp, HSG C
0.700	98	Paved parking & roofs
6.600	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.1	130	0.0615	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
6.3	669	0.0643	1.8		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
34.4	799	Total			

Subcatchment 3S: POND 3 DA



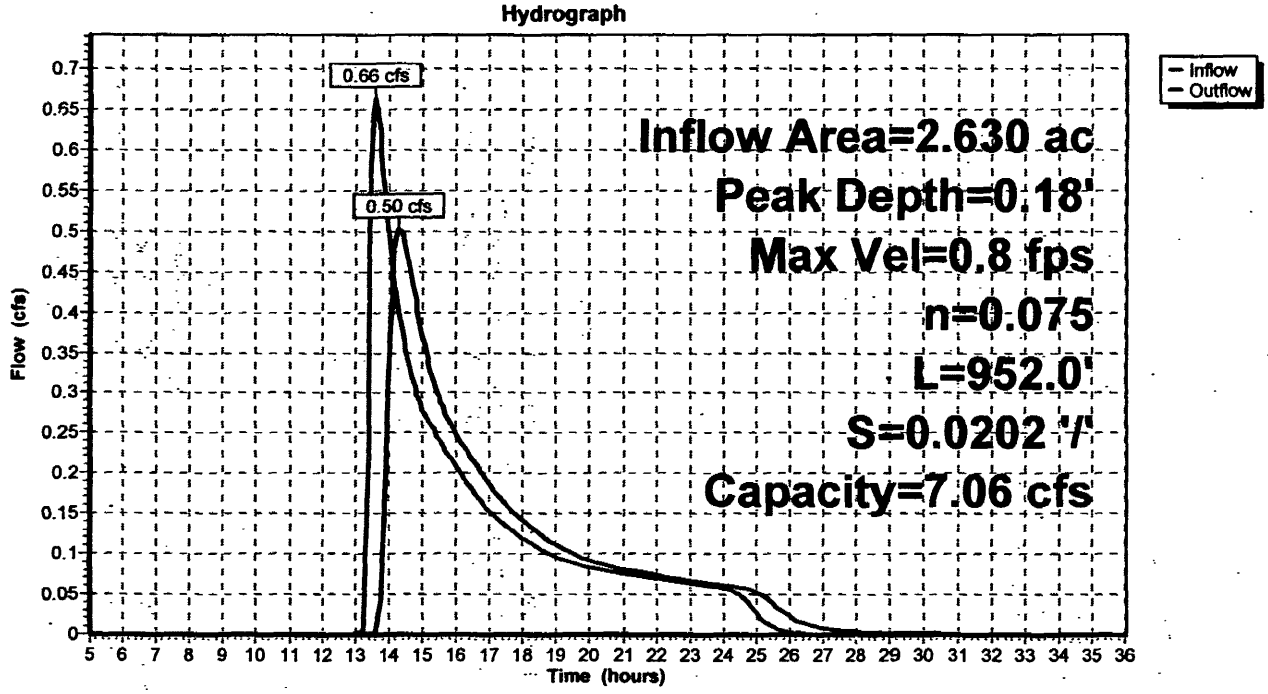
Reach 2R: POND 1 TO POND 2

Inflow Area = 2.630 ac, Inflow Depth = 0.68" for 1 YR event
Inflow = 0.66 cfs @ 13.62 hrs, Volume= 0.149 af
Outflow = 0.50 cfs @ 14.33 hrs, Volume= 0.149 af, Atten= 24%, Lag= 42.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.8 fps, Min. Travel Time= 19.8 min
Avg. Velocity = 0.3 fps, Avg. Travel Time= 50.0 min

Peak Depth= 0.18' @ 14.00 hrs
Capacity at bank full= 7.06 cfs
3.00' x 0.75' deep channel, n= 0.075 Length= 952.0' Slope= 0.0202 '/'
Side Slope Z-value= 3.0 '/'

Reach 2R: POND 1 TO POND 2



Pond 1P: POND 1

Inflow Area = 2.630 ac, Inflow Depth = 1.19" for 1 YR event
Inflow = 1.41 cfs @ 12.83 hrs, Volume= 0.260 af
Outflow = 0.66 cfs @ 13.62 hrs, Volume= 0.149 af, Atten= 53%, Lag= 47.2 min
Primary = 0.66 cfs @ 13.62 hrs, Volume= 0.149 af

Routing by Stor-Ind method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 433.09' @ 13.62 hrs Surf.Area= 4,287 sf Storage= 5,169 cf
Flood Elev= 433.50' Surf.Area= 4,876 sf Storage= 6,600 cf
Plug-Flow detention time= 230.4 min calculated for 0.149 af (57% of inflow)
Center-of-Mass det. time= 110.7 min (1,009.4 - 898.7)

#	Invert	Avail.Storage	Storage Description
1	429.00'	657 cf	**FOREBAY (Irregular)** Listed below
2	431.00'	7,686 cf	**PERM. POOL (Irregular)** Listed below
		8,343 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
429.00	0	0.0	0	0	0
430.00	108	53.0	36	36	225
432.00	574	99.0	621	657	802

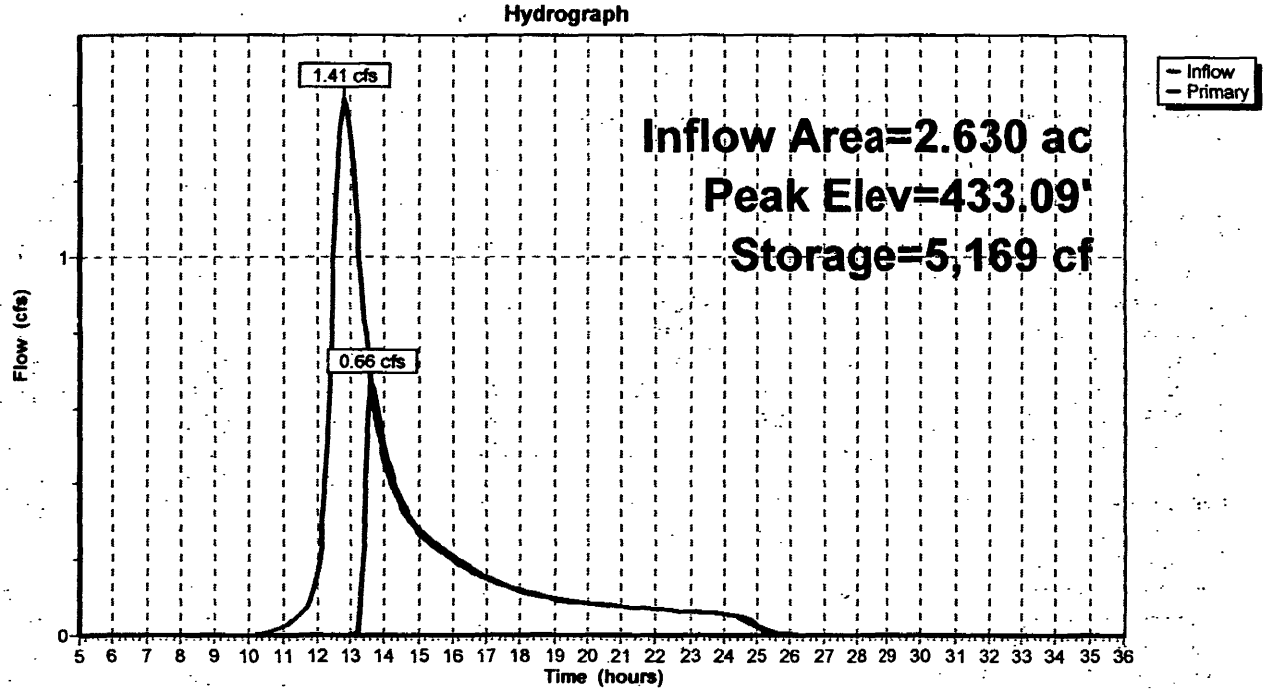
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
431.00	0	0.0	0	0	0
432.00	2,150	280.0	717	717	6,240
434.00	5,019	301.0	6,969	7,686	7,372

#	Routing	Invert	Outlet Devices
1	Primary	433.00'	**10.0' long x 8.0' breadth Broad-Crested Rectangular Weir**

Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=0.65 cfs @ 13.62 hrs HW=433.09' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.65 cfs @ 0.7 fps)

Pond 1P: POND 1



Pond 2P: POND 2

Inflow Area = 47.200 ac, Inflow Depth = 1.01" for 1 YR event
Inflow = 19.96 cfs @ 12.79 hrs, Volume= 3.955 af
Outflow = 12.29 cfs @ 13.37 hrs, Volume= 3.821 af, Atten= 38%, Lag= 34.8 min
Primary = 12.29 cfs @ 13.37 hrs, Volume= 3.821 af

Routing by Stor-Ind method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Starting Elev= 413.70' Surf.Area= 7,690 sf Storage= 6,577 cf
Peak Elev= 416.43' @ 13.37 hrs Surf.Area= 32,954 sf Storage= 45,288 cf (38,711 cf above start)
Flood Elev= 421.00' Surf.Area= 72,284 sf Storage= 252,797 cf (246,221 cf above start)
Plug-Flow detention time= 116.5 min calculated for 3.664 af (93% of inflow)
Center-of-Mass det. time= 70.4 min (982.0 - 911.6)

#	Invert	Avail.Storage	Storage Description
1	412.00'	3,293 cf	**Forebay (Irregular)** Listed below
2	412.00'	10,090 cf	**Perm. Pool (Irregular)** Listed below
3	413.70'	239,414 cf	**Main Pool (Irregular)** Listed below
		252,797 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.00	550	98.0	0	0	550
414.00	1,287	141.0	1,786	1,786	1,402
415.00	1,740	160.0	1,508	3,293	1,881

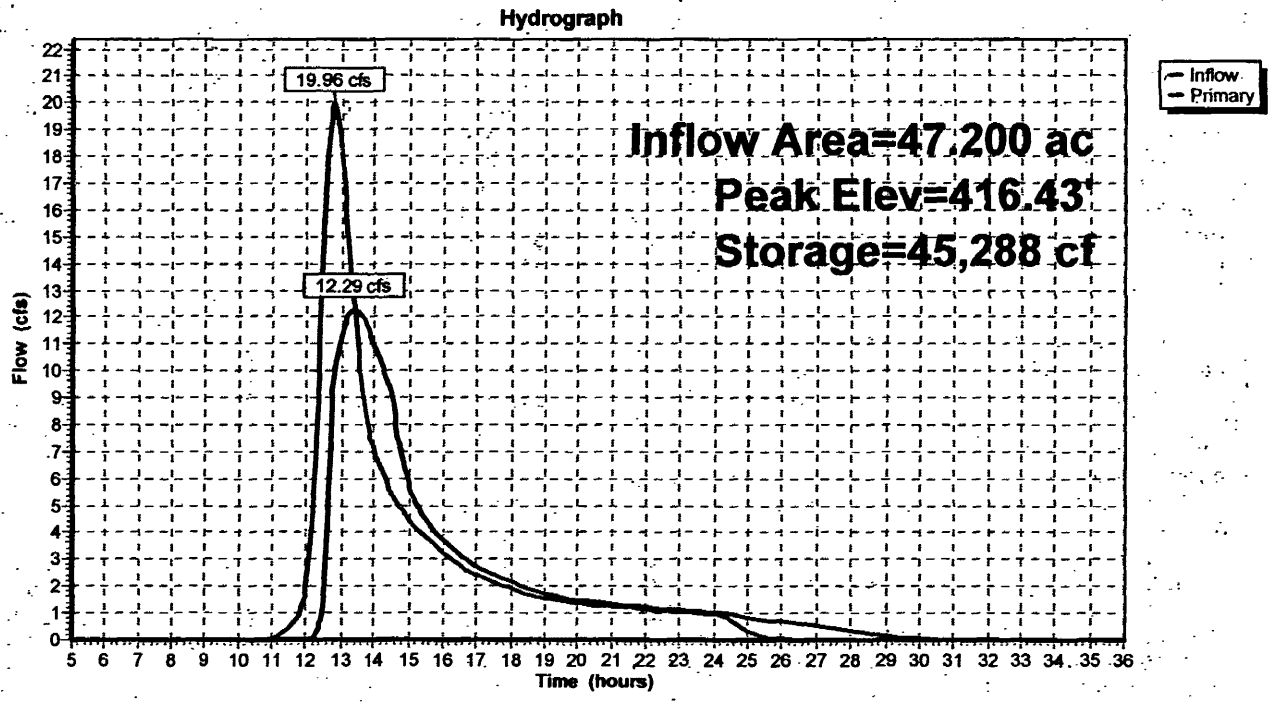
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.00	2,275	224.0	0	0	2,275
414.00	3,737	262.0	5,952	5,952	3,823
415.00	4,553	281.0	4,138	10,090	4,688

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
413.70	2,996	280.0	0	0	2,996
414.00	3,907	422.0	1,032	1,032	10,929
415.00	5,245	469.0	4,560	5,592	14,291
416.00	24,312	728.0	13,616	19,208	38,970
418.00	35,276	927.0	59,249	78,457	65,230
420.00	62,663	1,234.0	96,637	175,094	118,068
421.00	65,991	1,258.0	64,320	239,414	122,988

#	Routing	Invert	Outlet Devices
1	Primary	413.60'	**36.0" x 80.0' long Culvert** CPP, square edge headwall, Ke= 0.500 Outlet Invert= 412.80' S= 0.0100 '/' n= 0.012 Cc= 0.900
2	Device 1	413.70'	**6.0" Vert. Cpv** C= 0.600
3	Device 1	415.00'	**12.0" Vert. 10 yr X 3.00** C= 0.600
4	Device 1	419.00'	**2.50' x 4.00' Horiz. 10/100 yr grate** Limited to weir flow C= 0.600

Primary OutFlow Max=12.29 cfs @ 13.37 hrs HW=416.43' TW=414.36' (Fixed TW Elev= 414.36')
- **1=Culvert** (Passes 12.29 cfs of 38.25 cfs potential flow)
  - **2=Cpv** (Orifice Controls 1.36 cfs @ 6.9 fps)
  - **3=10 yr** (Orifice Controls 10.93 cfs @ 4.6 fps)
  - **4=10/100 yr grate** (Controls 0.00 cfs)

Pond 2P: POND 2



Pond 3P: POND 3

Inflow Area = 53.800 ac, Inflow Depth = 1.00" for 1 YR event
Inflow = 13.71 cfs @ 13.19 hrs, Volume= 4.474 af
Outflow = 13.65 cfs @ 13.30 hrs, Volume= 4.390 af, Atten= 0%, Lag= 6.7 min
Primary = 10.76 cfs @ 13.30 hrs, Volume= 4.069 af
Secondary = 2.89 cfs @ 13.30 hrs, Volume= 0.321 af

Routing by Stor-Ind method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs / 4
Peak Elev= 413.63' @ 13.30 hrs Surf.Area= 19,758 sf Storage= 15,090 cf
Plug-Flow detention time= 41.3 min calculated for 4.383 af (98% of inflow)
Center-of-Mass det. time= 28.4 min (994.8 - 966.5)

#	Invert	Avail.Storage	Storage Description
1	412.80'	44,843 cf	**Custom Stage Data (Irregular)** Listed below

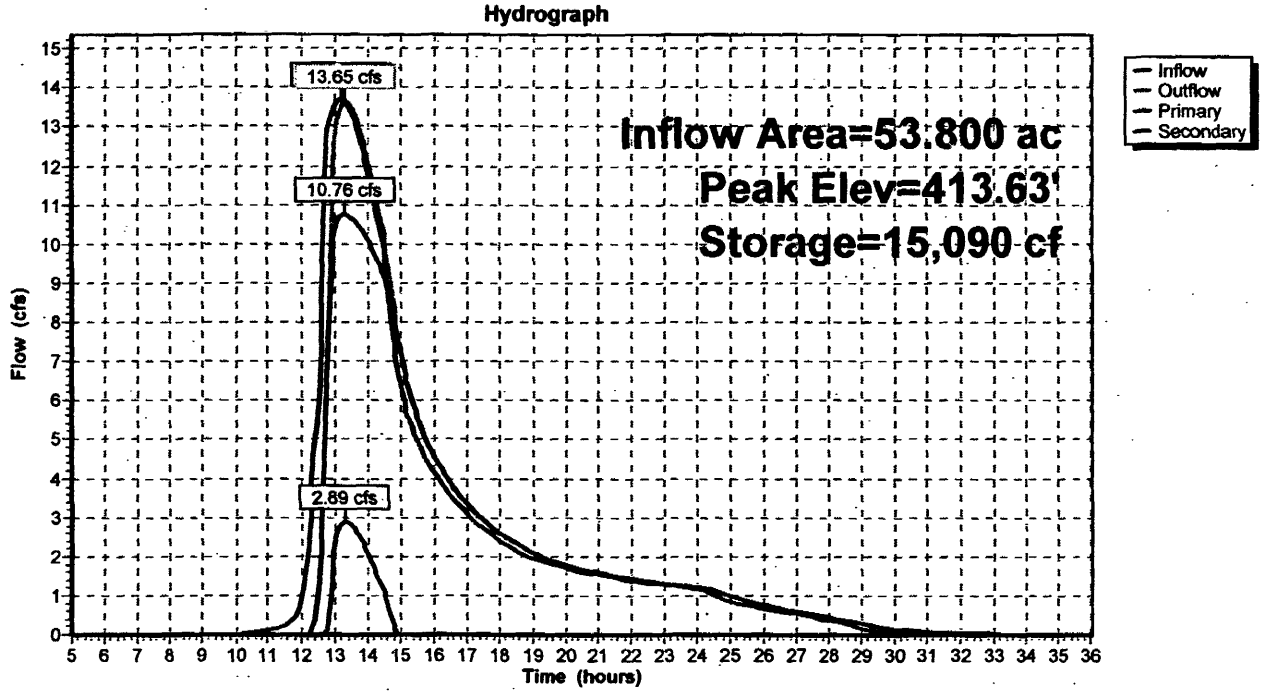
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.80	14,590	551.0	0	0	14,590
414.00	22,071	613.0	21,842	21,842	20,375
415.00	23,943	634.0	23,001	44,843	22,550

#	Routing	Invert	Outlet Devices
1	Primary	413.00'	**8.0' long x 12.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
2	Secondary	413.50'	**25.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=10.76 cfs @ 13.30 hrs HW=413.63' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 10.76 cfs @ 2.1 fps)

Secondary OutFlow Max=2.89 cfs @ 13.30 hrs HW=413.63' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 2.89 cfs @ 0.9 fps)

Pond 3P: POND 3



Subcatchment 1S: POND 1 WQv DA

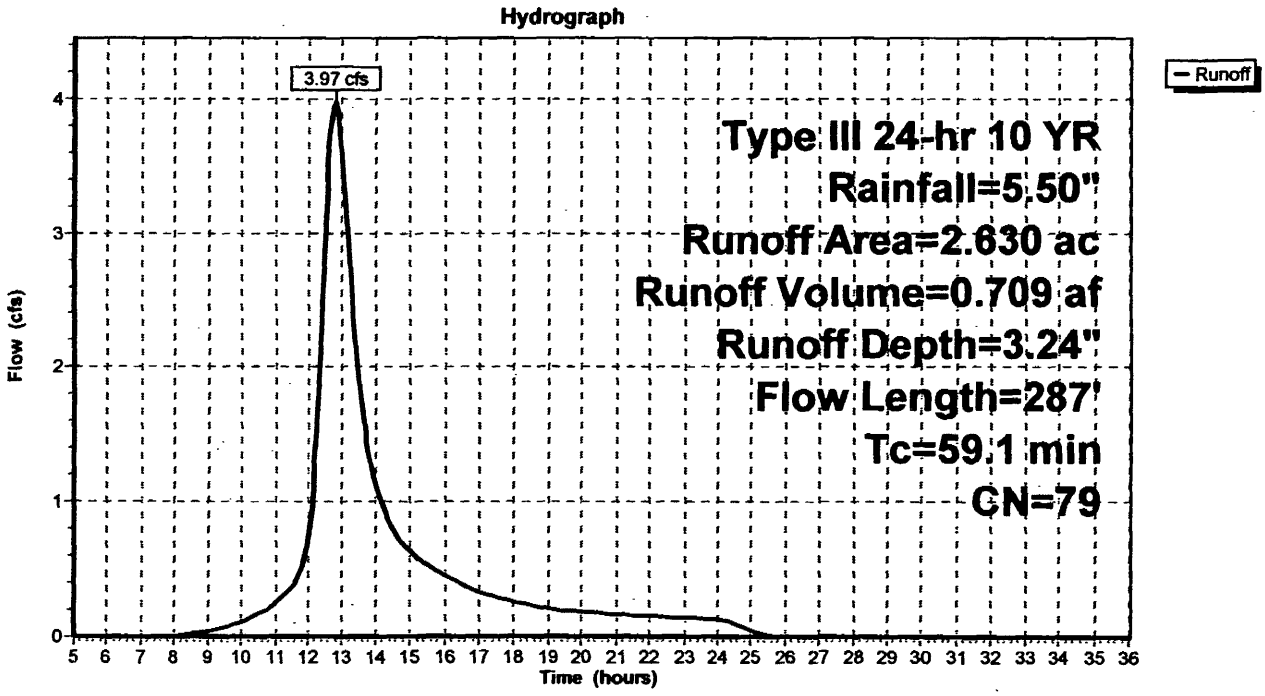
Runoff = 3.97 cfs @ 12.80 hrs, Volume= 0.709 af, Depth= 3.24"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=5.50"

Area (ac)	CN	Description
0.910	74	>75% Grass cover, Good, HSG C
1.020	70	Woods, Good, HSG C
0.700	98	Paved parking & roofs
2.630	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
43.6	128	0.0200	0.0		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
15.4	103	0.0020	0.1		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	56	0.0660	17.6	21.57	**Circular Channel (pipe),** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
59.1	287	Total			

Subcatchment 1S: POND 1 WQv DA



Subcatchment 1U: ONSITE UNTREATED

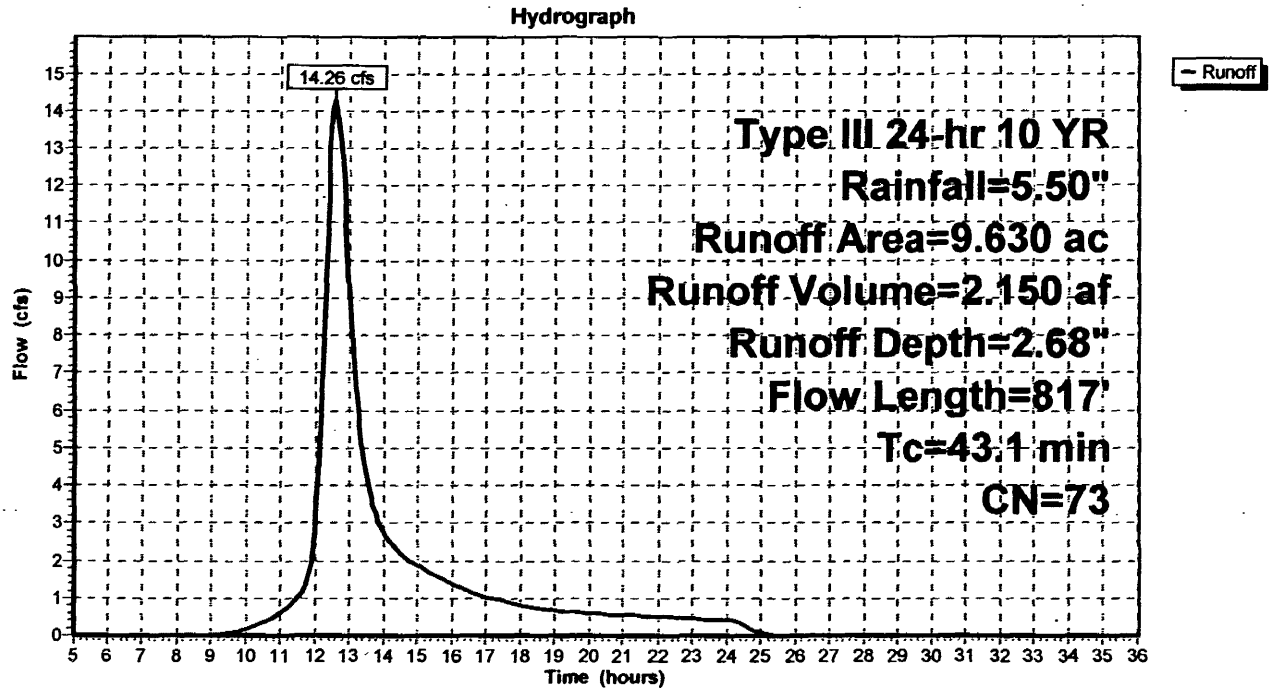
Runoff = 14.26 cfs @ 12.61 hrs, Volume= 2.150 af, Depth= 2.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=5.50"

Area (ac)	CN	Description
4.410	74	>75% Grass cover, Good, HSG C
0.410	80	>75% Grass cover, Good, HSG D
1.170	70	Woods, Good, HSG C
0.020	77	Woods, Good, HSG D
2.430	65	Brush, Good, HSG C
0.590	73	Brush, Good, HSG D
0.600	98	Paved parking & roofs
9.630	73	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	130	0.0346	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
0.4	38	0.0657	1.8		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.3	649	0.0151	1.5	4.71	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.75' Z= 3.0 '/' n= 0.075
43.1	817	Total			

Subcatchment 1U: ONSITE UNTREATED



Subcatchment 2S: POND 2 WQv DA

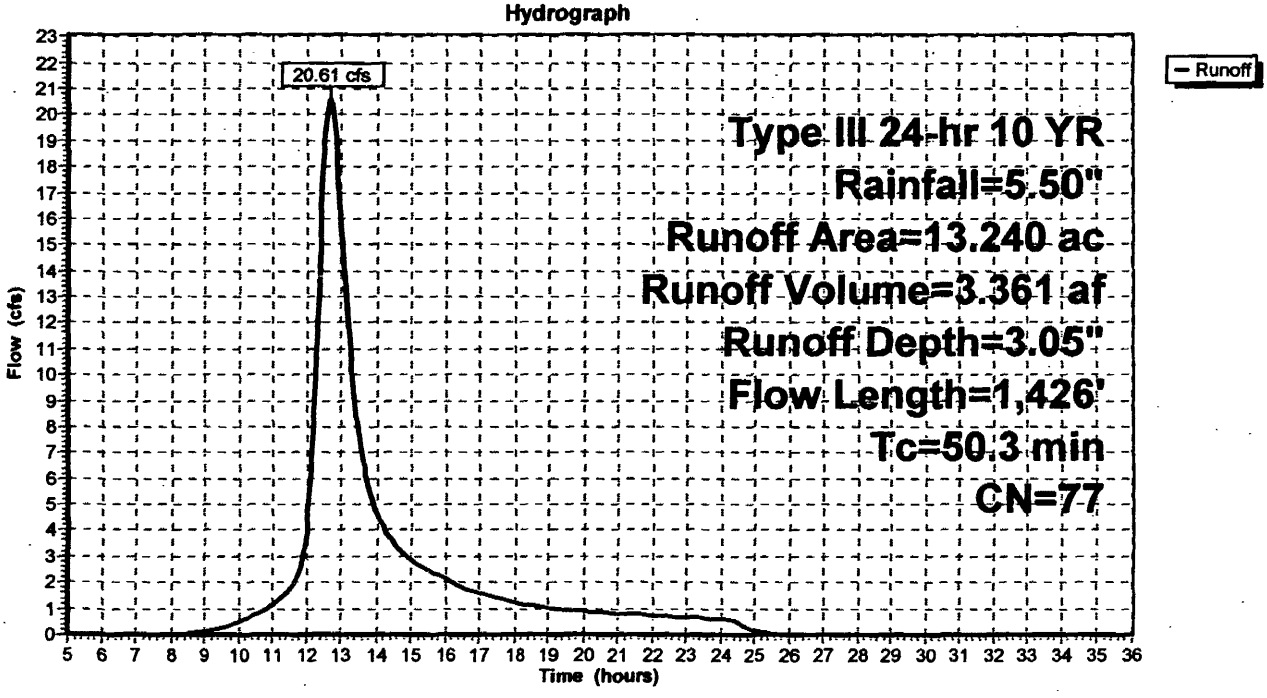
Runoff = 20.61 cfs @ 12.69 hrs, Volume= 3.361 af, Depth= 3.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=5.50"

Area (ac)	CN	Description
5.190	74	>75% Grass cover, Good, HSG C
1.020	80	>75% Grass cover, Good, HSG D
1.280	70	Woods, Good, HSG C
0.480	65	Brush, Good, HSG C
0.080	73	Brush, Good, HSG D
3.940	79	1 acre lots, 20% imp, HSG C (OFF SITE ONLY)
1.250	98	Paved parking & roofs
13.240	77	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.7	130	0.0230	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
0.8	102	0.1030	2.2		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	76	0.0250	0.8		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.0	366	0.0300	1.2		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	752	0.0266	10.5	18.56	**Circular Channel (pipe),** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
50.3	1,426	Total			

Subcatchment 2S: POND 2 WQv DA



Subcatchment 2U: OFFSITE UNTREATED

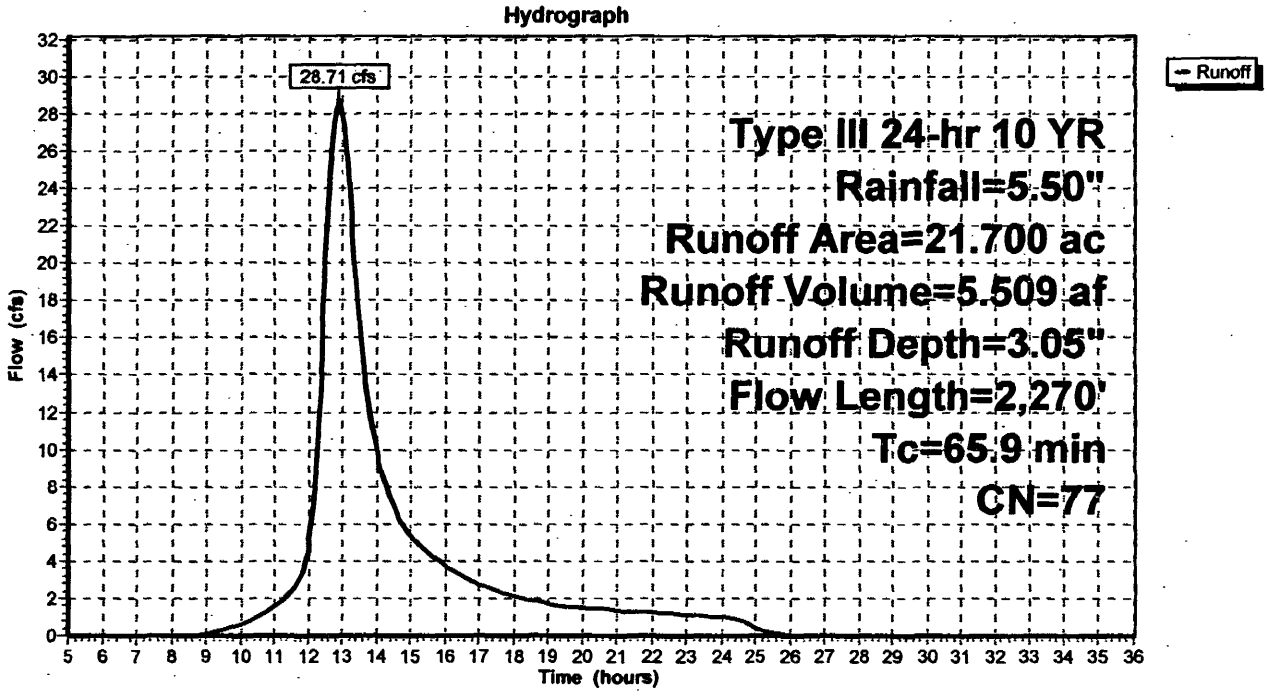
Runoff = 28.71 cfs @ 12.90 hrs, Volume= 5.509 af, Depth= 3.05"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=5.50"

Area (ac)	CN	Description
0.900	74	>75% Grass cover, Good, HSG C
5.900	70	Woods, Good, HSG C
14.200	79	1 acre lots, 20% imp, HSG C
0.700	98	Paved parking & roofs
21.700	77	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.0	137	0.0200	0.0		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
5.5	100	0.0146	0.3		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.3	667	0.0480	2.1	3.69	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.50' Z= 3.0 '/' n= 0.075
5.2	551	0.0335	1.8	3.09	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.50' Z= 3.0 '/' n= 0.075
0.4	470	0.0255	18.1	174.05	**Circular Channel (pipe),** Diam= 42.0" Area= 9.6 sf Perim= 11.0' r= 0.88' n= 0.012
3.5	345	0.0168	1.6	6.44	**Trap/Vee/Rect Channel Flow,** Bot.W=3.00' D=0.75' Z= 3.0 '/' n= 0.075
65.9	2,270	Total			

Subcatchment 2U: OFFSITE UNTREATED



Subcatchment 3S: POND 3 DA

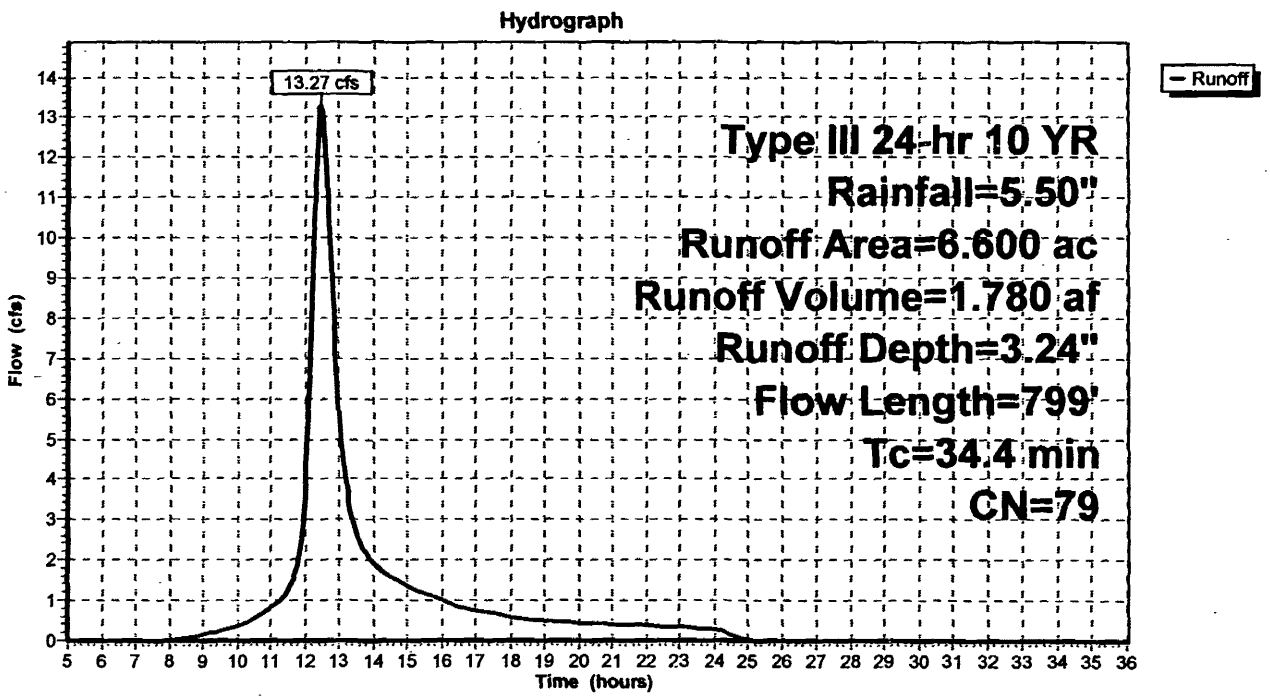
Runoff = 13.27 cfs @ 12.48 hrs, Volume= 1.780 af, Depth= 3.24"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 YR Rainfall=5.50"

Area (ac)	CN	Description
2.270	74	>75% Grass cover, Good, HSG C
1.570	80	>75% Grass cover, Good, HSG D
0.170	70	Woods, Good, HSG C
1.890	79	1 acre lots, 20% imp, HSG C
0.700	98	Paved parking & roofs
6.600	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.1	130	0.0615	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
6.3	669	0.0643	1.8		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
34.4	799	Total			

Subcatchment 3S: POND 3 DA



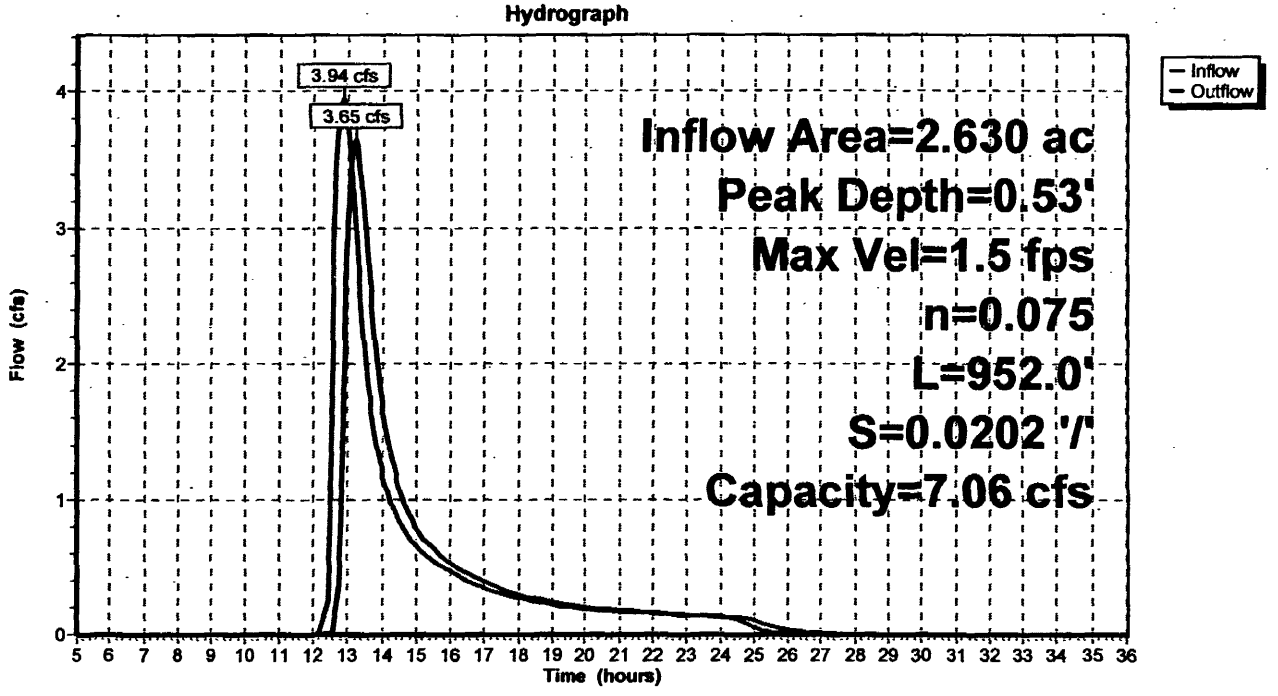
Reach 2R: POND 1 TO POND 2

Inflow Area = 2.630 ac, Inflow Depth = 2.73" for 10 YR event
Inflow = 3.94 cfs @ 12.85 hrs, Volume= 0.598 af
Outflow = 3.65 cfs @ 13.21 hrs, Volume= 0.598 af, Atten= 7%, Lag= 21.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.5 fps, Min. Travel Time= 10.7 min
Avg. Velocity = 0.5 fps, Avg. Travel Time= 35.1 min

Peak Depth= 0.53' @ 13.03 hrs
Capacity at bank full= 7.06 cfs
3.00' x 0.75' deep channel, n= 0.075 Length= 952.0' Slope= 0.0202 '/'
Side Slope Z-value= 3.0 '/'

Reach 2R: POND 1 TO POND 2



Pond 1P: POND 1

Inflow Area = 2.630 ac, Inflow Depth = 3.24" for 10 YR event
Inflow = 3.97 cfs @ 12.80 hrs, Volume= 0.709 af
Outflow = 3.94 cfs @ 12.85 hrs, Volume= 0.598 af, Atten= 1%, Lag= 3.0 min
Primary = 3.94 cfs @ 12.85 hrs, Volume= 0.598 af

Routing by Stor-Ind method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 433.29' @ 12.85 hrs Surf.Area= 4,579 sf Storage= 5,879 cf
Flood Elev= 433.50' Surf.Area= 4,876 sf Storage= 6,600 cf
Plug-Flow detention time= 104.3 min calculated for 0.597 af (84% of inflow)
Center-of-Mass det. time= 38.2 min (907.8 - 869.6)

#	Invert	Avail.Storage	Storage Description
1	429.00'	657 cf	**FOREBAY (Irregular)** Listed below
2	431.00'	7,686 cf	**PERM. POOL (Irregular)** Listed below
		8,343 cf	Total Available Storage

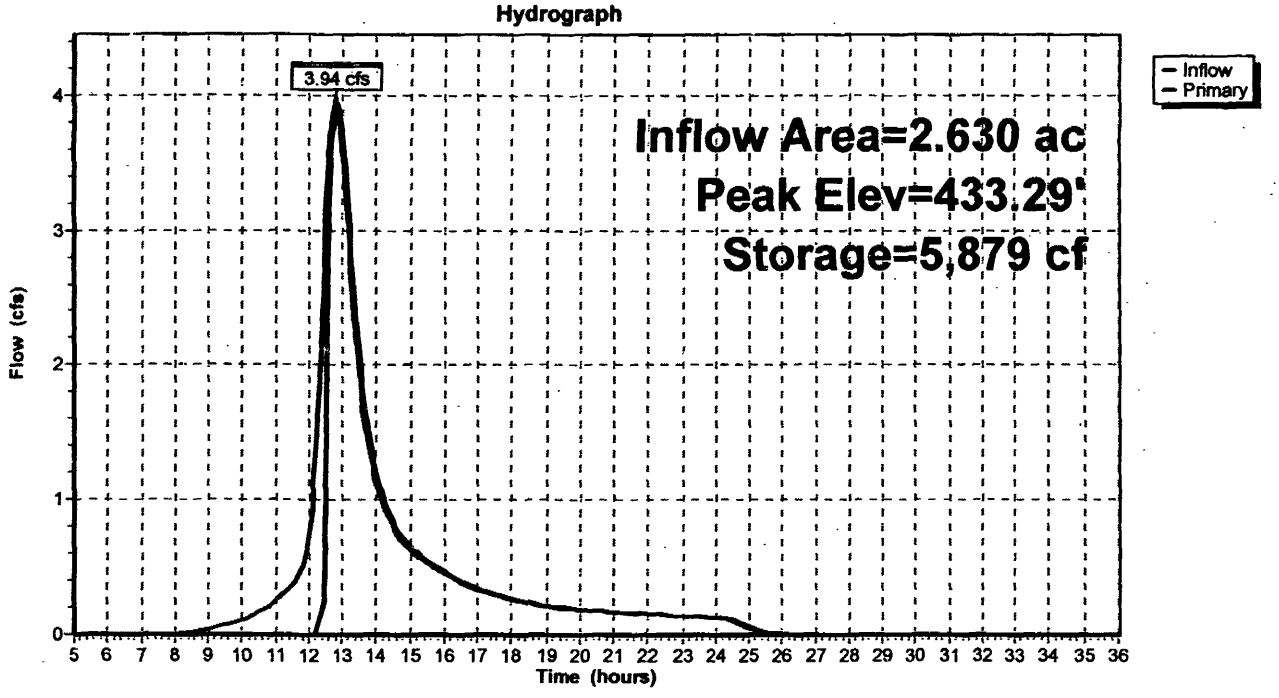
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
429.00	0	0.0	0	0	0
430.00	108	53.0	36	36	225
432.00	574	99.0	621	657	802

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
431.00	0	0.0	0	0	0
432.00	2,150	280.0	717	717	6,240
434.00	5,019	301.0	6,969	7,686	7,372

#	Routing	Invert	Outlet Devices
1	Primary	433.00'	**10.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=3.93 cfs @ 12.85 hrs HW=433.29' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 3.93 cfs @ 1.3 fps)

Pond 1P: POND 1



Pond 2P: POND 2

Inflow Area = 47.200 ac, Inflow Depth = 2.95" for 10 YR event
Inflow = 61.45 cfs @ 12.78 hrs, Volume= 11.618 af
Outflow = 33.47 cfs @ 13.47 hrs, Volume= 11.483 af, Atten= 46%, Lag= 41.1 min
Primary = 33.47 cfs @ 13.47 hrs, Volume= 11.483 af

Routing by Stor-Ind method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Starting Elev= 413.70' Surf.Area= 7,690 sf Storage= 6,577 cf
Peak Elev= 419.36' @ 13.47 hrs Surf.Area= 60,139 sf Storage= 157,367 cf (150,791 cf above start)
Flood Elev= 421.00' Surf.Area= 72,284 sf Storage= 252,797 cf (246,221 cf above start)
Plug-Flow detention time= 91.7 min calculated for 11.332 af (98% of inflow)
Center-of-Mass det. time= 73.4 min (950.9 - 877.5)

#	Invert	Avail.Storage	Storage Description
1	412.00'	3,293 cf	**Forebay (Irregular)** Listed below
2	412.00'	10,090 cf	**Perm. Pool (Irregular)** Listed below
3	413.70'	239,414 cf	**Main Pool (Irregular)** Listed below
		252,797 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.00	550	98.0	0	0	550
414.00	1,287	141.0	1,786	1,786	1,402
415.00	1,740	160.0	1,508	3,293	1,881

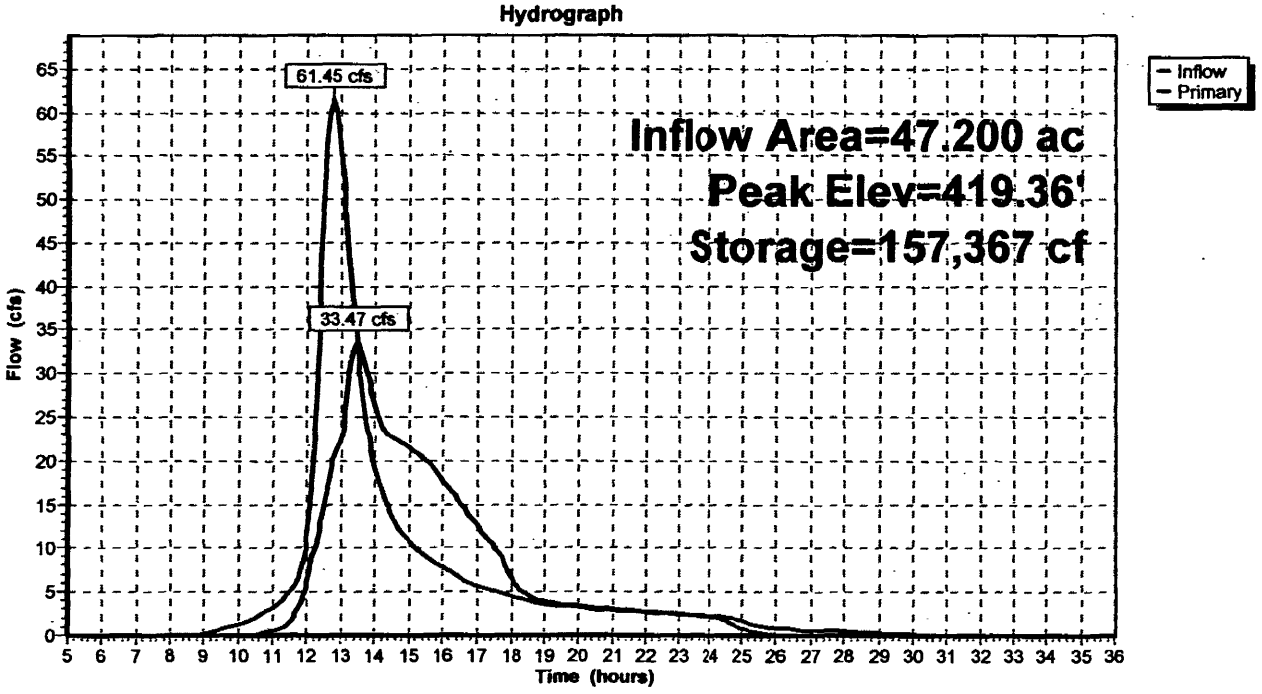
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.00	2,275	224.0	0	0	2,275
414.00	3,737	262.0	5,952	5,952	3,823
415.00	4,553	281.0	4,138	10,090	4,688

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
413.70	2,996	280.0	0	0	2,996
414.00	3,907	422.0	1,032	1,032	10,929
415.00	5,245	469.0	4,560	5,592	14,291
416.00	24,312	728.0	13,616	19,208	38,970
418.00	35,276	927.0	59,249	78,457	65,230
420.00	62,663	1,234.0	96,637	175,094	118,068
421.00	65,991	1,258.0	64,320	239,414	122,988

#	Routing	Invert	Outlet Devices
1	Primary	413.60'	**36.0" x 80.0' long Culvert** CPP, square edge headwall, Ke= 0.500 Outlet Invert= 412.80' S= 0.0100 '/' n= 0.012 Cc= 0.900
2	Device 1	413.70'	**6.0" Vert. Cpv** C= 0.600
3	Device 1	415.00'	**12.0" Vert. 10 yr X 3.00** C= 0.600
4	Device 1	419.00'	**2.50' x 4.00' Horiz. 10/100 yr grate** Limited to weir flow C= 0.600

Primary OutFlow Max=33.39 cfs @ 13.47 hrs HW=419.36' TW=414.36' (Fixed TW Elev= 414.36')
- **1=Culvert** (Passes 33.39 cfs of 70.21 cfs potential flow)
  - **2=Cpv** (Orifice Controls 2.11 cfs @ 10.8 fps)
  - **3=10 yr** (Orifice Controls 22.28 cfs @ 9.5 fps)
  - **4=10/100 yr grate** (Weir Controls 9.00 cfs @ 1.9 fps)

Pond 2P: POND 2



Pond 3P: POND 3

Inflow Area = 53.800 ac, Inflow Depth = 2.96" for 10 YR event
Inflow = 36.29 cfs @ 13.44 hrs, Volume= 13.263 af
Outflow = 36.07 cfs @ 13.50 hrs, Volume= 13.179 af, Atten= 1%, Lag= 3.6 min
Primary = 18.73 cfs @ 13.50 hrs, Volume= 9.299 af
Secondary = 17.35 cfs @ 13.50 hrs, Volume= 3.880 af

Routing by Stor-Ind method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs / 4
Peak Elev= 413.92' @ 13.50 hrs Surf.Area= 21,556 sf Storage= 20,339 cf
Plug-Flow detention time= 20.4 min calculated for 13.158 af (99% of inflow)
Center-of-Mass det. time= 15.9 min (952.8 - 936.9)

#	Invert	Avail.Storage	Storage Description
1	412.80'	44,843 cf	**Custom Stage Data (Irregular)** Listed below

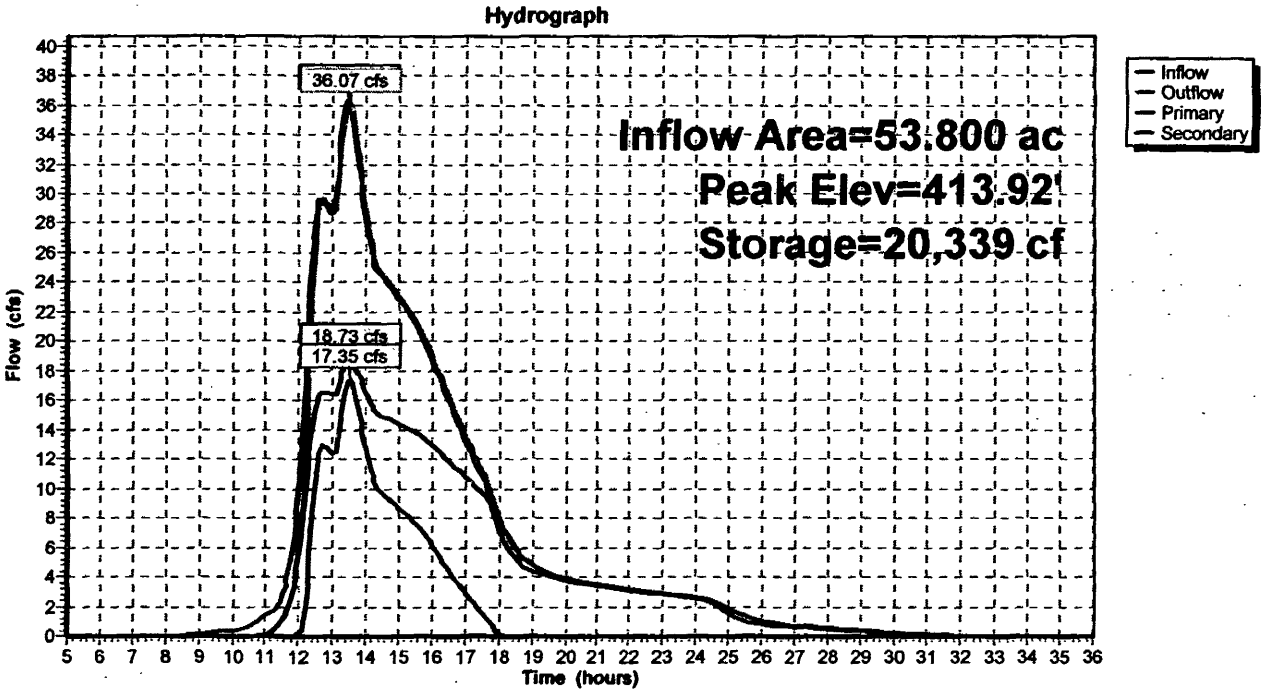
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.80	14,590	551.0	0	0	14,590
414.00	22,071	613.0	21,842	21,842	20,375
415.00	23,943	634.0	23,001	44,843	22,550

#	Routing	Invert	Outlet Devices
1	Primary	413.00'	**8.0' long x 12.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
2	Secondary	413.50'	**25.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=18.73 cfs @ 13.50 hrs HW=413.92' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 18.73 cfs @ 2.6 fps)

Secondary OutFlow Max=17.34 cfs @ 13.50 hrs HW=413.92' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 17.34 cfs @ 1.7 fps)

Pond 3P: POND 3



Subcatchment 1S: POND 1 WQv DA

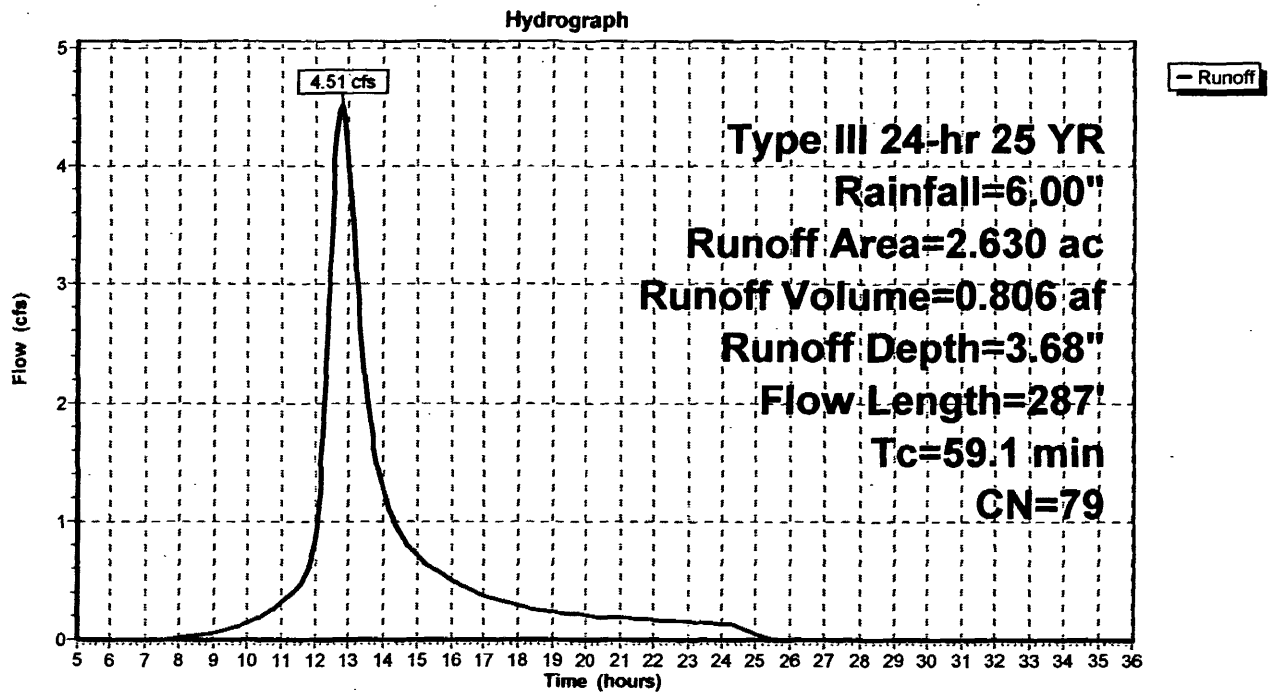
Runoff = 4.51 cfs @ 12.80 hrs, Volume= 0.806 af, Depth= 3.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=6.00"

Area (ac)	CN	Description
0.910	74	>75% Grass cover, Good, HSG C
1.020	70	Woods, Good, HSG C
0.700	98	Paved parking & roofs
2.630	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
43.6	128	0.0200	0.0		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
15.4	103	0.0020	0.1		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	56	0.0660	17.6	21.57	**Circular Channel (pipe),** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
59.1	287	Total			

Subcatchment 1S: POND 1 WQv DA



Subcatchment 1U: ONSITE UNTREATED

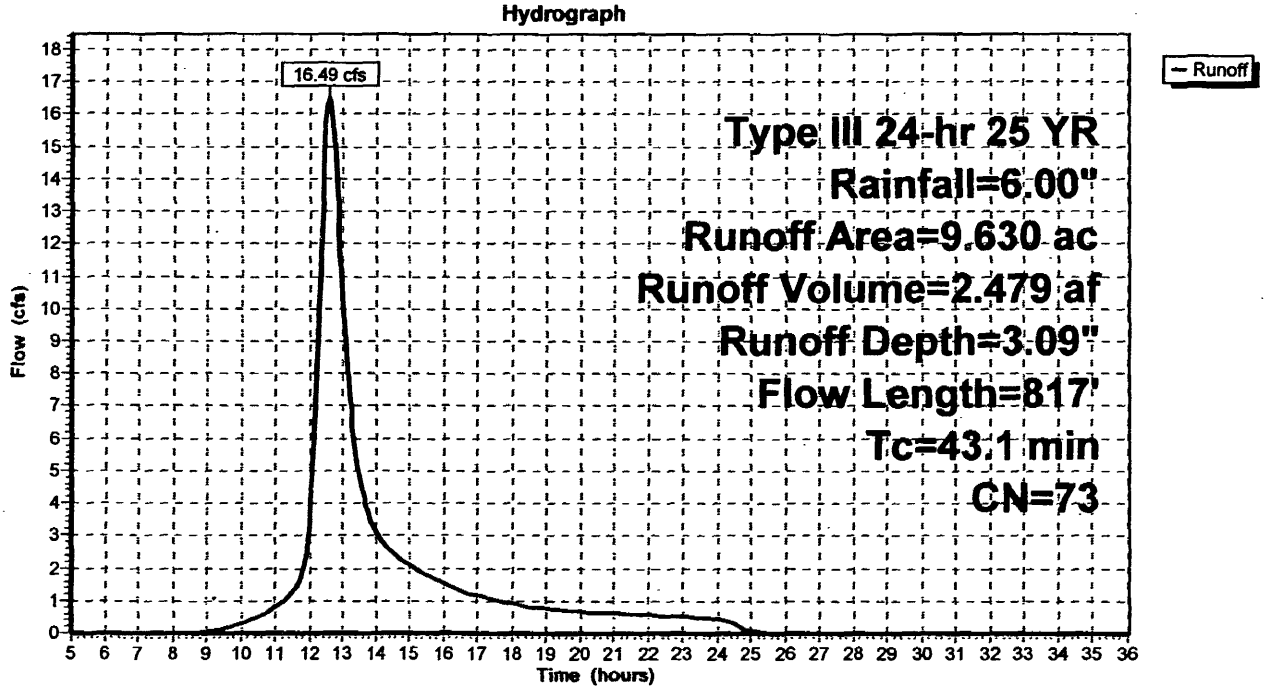
Runoff = 16.49 cfs @ 12.60 hrs, Volume= 2.479 af, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=6.00"

Area (ac)	CN	Description
4.410	74	>75% Grass cover, Good, HSG C
0.410	80	>75% Grass cover, Good, HSG D
1.170	70	Woods, Good, HSG C
0.020	77	Woods, Good, HSG D
2.430	65	Brush, Good, HSG C
0.590	73	Brush, Good, HSG D
0.600	98	Paved parking & roofs
9.630	73	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	130	0.0346	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
0.4	38	0.0657	1.8		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.3	649	0.0151	1.5	4.71	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.75' Z= 3.0 '/' n= 0.075
43.1	817	Total			

Subcatchment 1U: ONSITE UNTREATED



Subcatchment 2S: POND 2 WQv DA

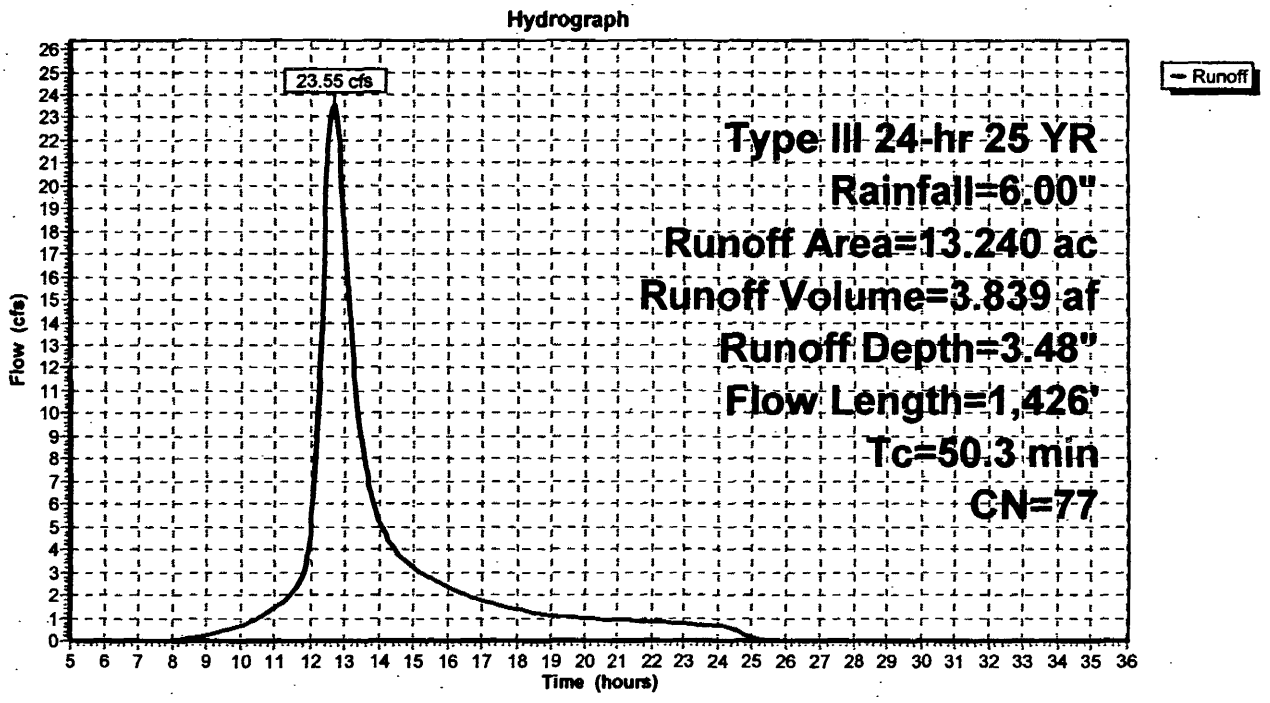
Runoff = 23.55 cfs @ 12.69 hrs, Volume= 3.839 af, Depth= 3.48"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=6.00"

Area (ac)	CN	Description
5.190	74	>75% Grass cover, Good, HSG C
1.020	80	>75% Grass cover, Good, HSG D
1.280	70	Woods, Good, HSG C
0.480	65	Brush, Good, HSG C
0.080	73	Brush, Good, HSG D
3.940	79	1 acre lots, 20% imp, HSG C (OFF SITE ONLY)
1.250	98	Paved parking & roofs
13.240	77	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.7	130	0.0230	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
0.8	102	0.1030	2.2		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	76	0.0250	0.8		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.0	366	0.0300	1.2		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	752	0.0266	10.5	18.56	**Circular Channel (pipe),** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
50.3	1,426	Total			

Subcatchment 2S: POND 2 WQv DA



Subcatchment 2U: OFFSITE UNTREATED

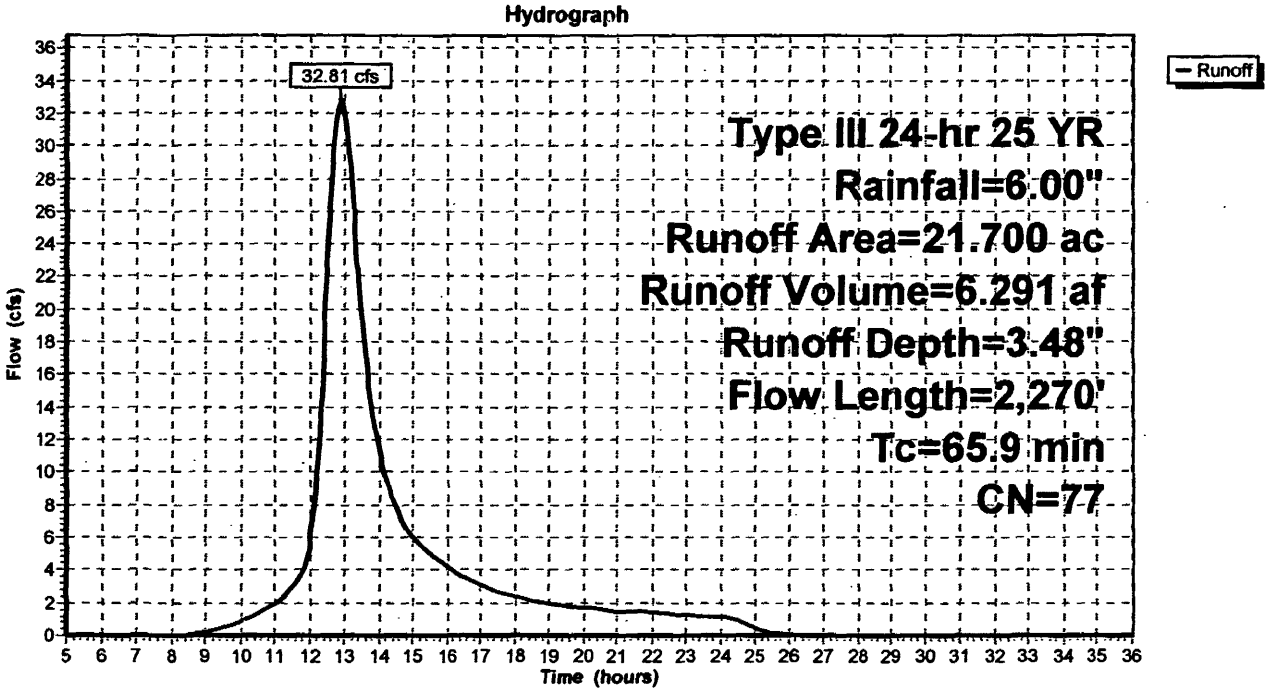
Runoff = 32.81 cfs @ 12.89 hrs, Volume= 6.291 af, Depth= 3.48"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=6.00"

Area (ac)	CN	Description
0.900	74	>75% Grass cover, Good, HSG C
5.900	70	Woods, Good, HSG C
14.200	79	1 acre lots, 20% imp, HSG C
0.700	98	Paved parking & roofs
21.700	77	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.0	137	0.0200	0.0		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
5.5	100	0.0146	0.3		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.3	667	0.0480	2.1	3.69	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.50' Z= 3.0 '/' n= 0.075
5.2	551	0.0335	1.8	3.09	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.50' Z= 3.0 '/' n= 0.075
0.4	470	0.0255	18.1	174.05	**Circular Channel (pipe),** Diam= 42.0" Area= 9.6 sf Perim= 11.0' r= 0.88' n= 0.012
3.5	345	0.0168	1.6	6.44	**Trap/Vee/Rect Channel Flow,** Bot.W=3.00' D=0.75' Z= 3.0 '/' n= 0.075
65.9	2,270	Total			

Subcatchment 2U: OFFSITE UNTREATED



Subcatchment 3S: POND 3 DA

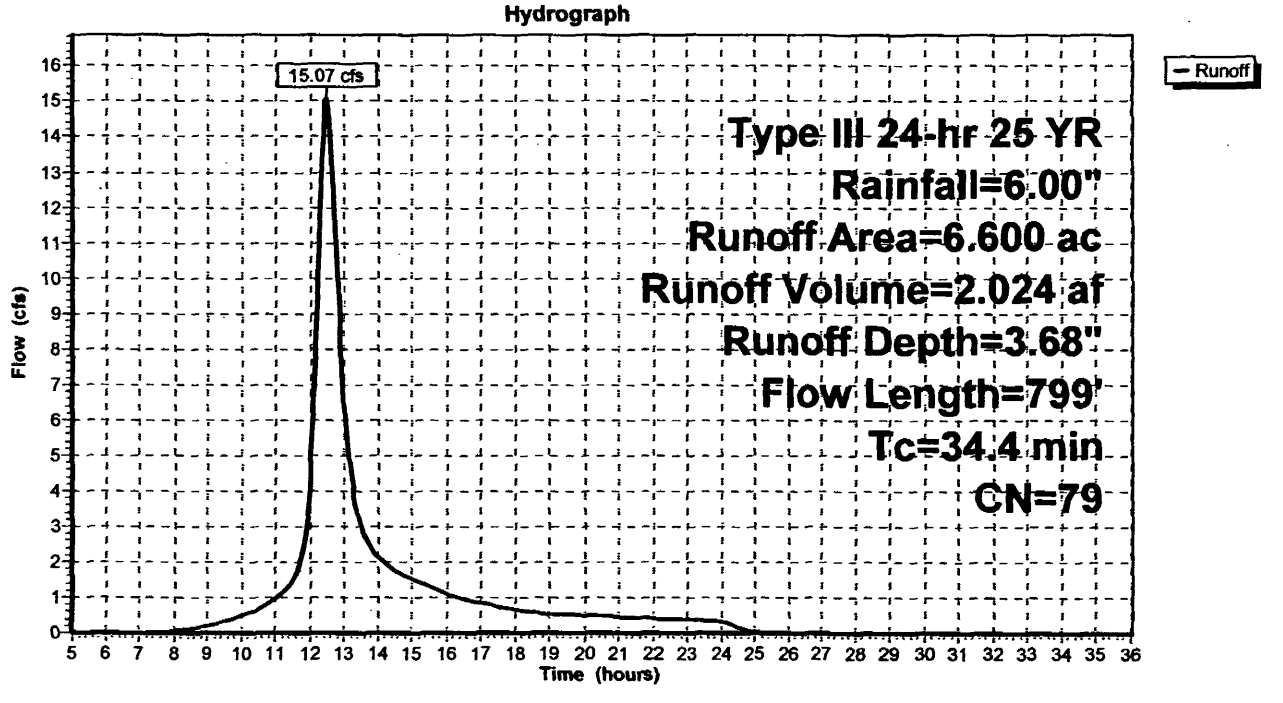
Runoff = 15.07 cfs @ 12.48 hrs, Volume= 2.024 af, Depth= 3.68"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=6.00"

Area (ac)	CN	Description
2.270	74	>75% Grass cover, Good, HSG C
1.570	80	>75% Grass cover, Good, HSG D
0.170	70	Woods, Good, HSG C
1.890	79	1 acre lots, 20% imp, HSG C
0.700	98	Paved parking & roofs
6.600	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.1	130	0.0615	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
6.3	669	0.0643	1.8		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
34.4	799	Total			

Subcatchment 3S: POND 3 DA



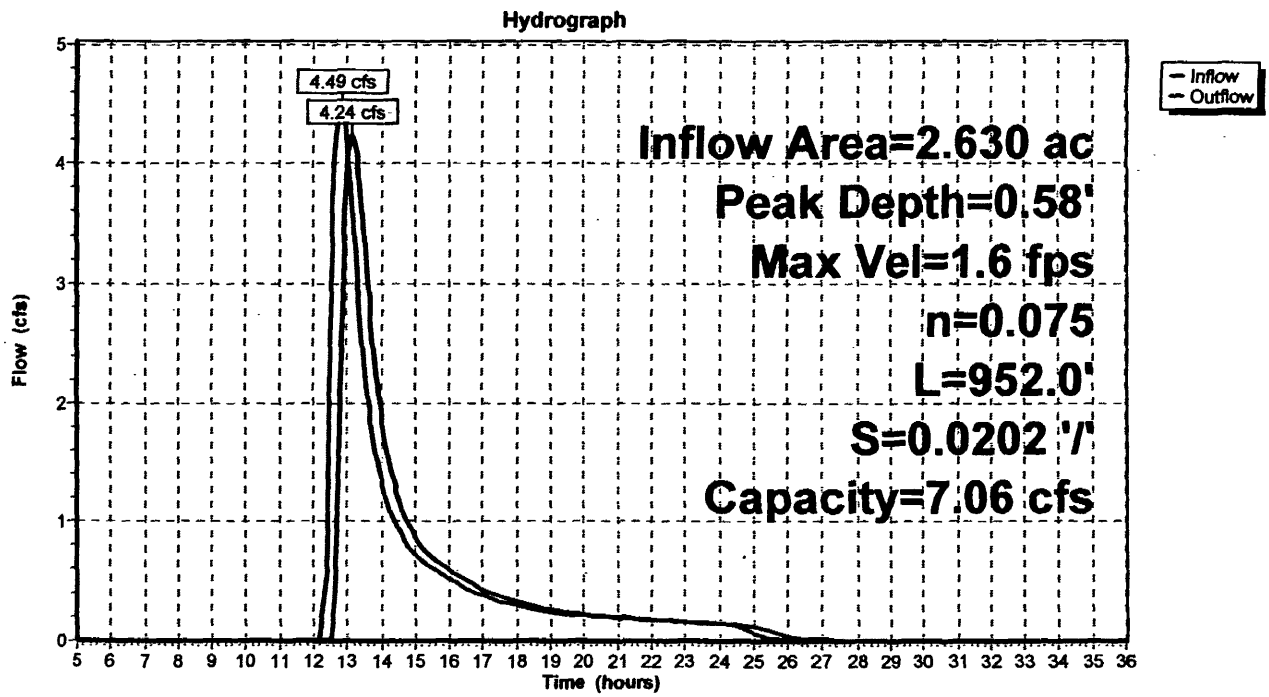
Reach 2R: POND 1 TO POND 2

Inflow Area = 2.630 ac, Inflow Depth = 3.17" for 25 YR event
Inflow = 4.49 cfs @ 12.84 hrs, Volume= 0.695 af
Outflow = 4.24 cfs @ 13.17 hrs, Volume= 0.695 af, Atten= 6%, Lag= 19.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.6 fps, Min. Travel Time= 10.2 min
Avg. Velocity = 0.5 fps, Avg. Travel Time= 33.8 min

Peak Depth= 0.58' @ 13.00 hrs
Capacity at bank full= 7.06 cfs
3.00' x 0.75' deep channel, n= 0.075 Length= 952.0' Slope= 0.0202 '/'
Side Slope Z-value= 3.0 '/'

Reach 2R: POND 1 TO POND 2



Pond 1P: POND 1

Inflow Area = 2.630 ac, Inflow Depth = 3.68" for 25 YR event
Inflow = 4.51 cfs @ 12.80 hrs, Volume= 0.806 af
Outflow = 4.49 cfs @ 12.84 hrs, Volume= 0.695 af, Atten= 1%, Lag= 2.6 min
Primary = 4.49 cfs @ 12.84 hrs, Volume= 0.695 af

Routing by Stor-Ind method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 433.32' @ 12.84 hrs Surf.Area= 4,615 sf Storage= 5,966 cf
Flood Elev= 433.50' Surf.Area= 4,876 sf Storage= 6,600 cf
Plug-Flow detention time= 95.7 min calculated for 0.694 af (86% of inflow)
Center-of-Mass det. time= 35.1 min (901.0 - 865.9)

#	Invert	Avail.Storage	Storage Description
1	429.00'	657 cf	**FOREBAY (Irregular)** Listed below
2	431.00'	7,686 cf	**PERM. POOL (Irregular)** Listed below
		8,343 cf	Total Available Storage

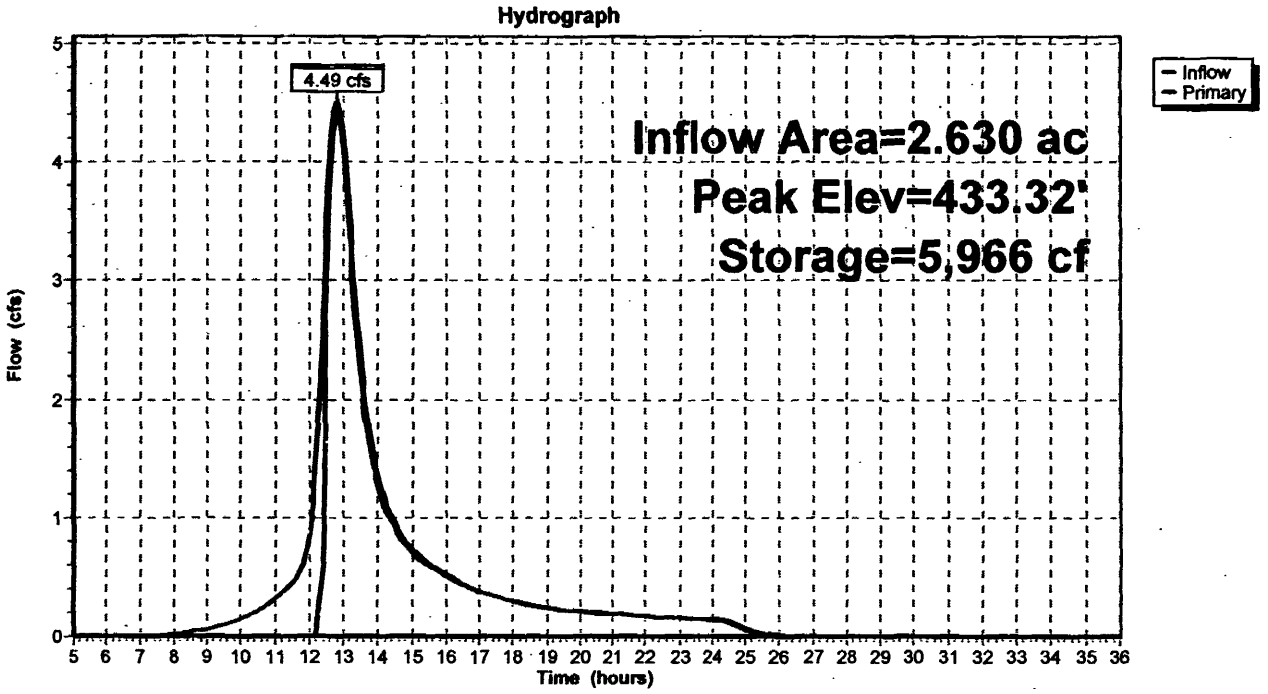
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
429.00	0	0.0	0	0	0
430.00	108	53.0	36	36	225
432.00	574	99.0	621	657	802

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
431.00	0	0.0	0	0	0
432.00	2,150	280.0	717	717	6,240
434.00	5,019	301.0	6,969	7,686	7,372

#	Routing	Invert	Outlet Devices
1	Primary	433.00'	**10.0' long x 8.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=4.47 cfs @ 12.84 hrs HW=433.32' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 4.47 cfs @ 1.4 fps)

Pond 1P: POND 1



Pond 2P: POND 2

Inflow Area = 47.200 ac, Inflow Depth = 3.38" for 25 YR event
Inflow = 71.44 cfs @ 12.78 hrs, Volume= 13.303 af
Outflow = 45.27 cfs @ 13.32 hrs, Volume= 13.169 af, Atten= 37%, Lag= 32.6 min
Primary = 45.27 cfs @ 13.32 hrs, Volume= 13.169 af

Routing by Stor-Ind method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Starting Elev= 413.70' Surf.Area= 7,690 sf Storage= 6,577 cf
Peak Elev= 419.61' @ 13.32 hrs Surf.Area= 63,567 sf Storage= 169,461 cf (162,884 cf above start)
Flood Elev= 421.00' Surf.Area= 72,284 sf Storage= 252,797 cf (246,221 cf above start)
Plug-Flow detention time= 85.8 min calculated for 12.997 af (98% of inflow)
Center-of-Mass det. time= 70.3 min (943.7 - 873.4)

#	Invert	Avail.Storage	Storage Description
1	412.00'	3,293 cf	**Forebay (Irregular)** Listed below
2	412.00'	10,090 cf	**Perm. Pool (Irregular)** Listed below
3	413.70'	239,414 cf	**Main Pool (Irregular)** Listed below
		252,797 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.00	550	98.0	0	0	550
414.00	1,287	141.0	1,786	1,786	1,402
415.00	1,740	160.0	1,508	3,293	1,881

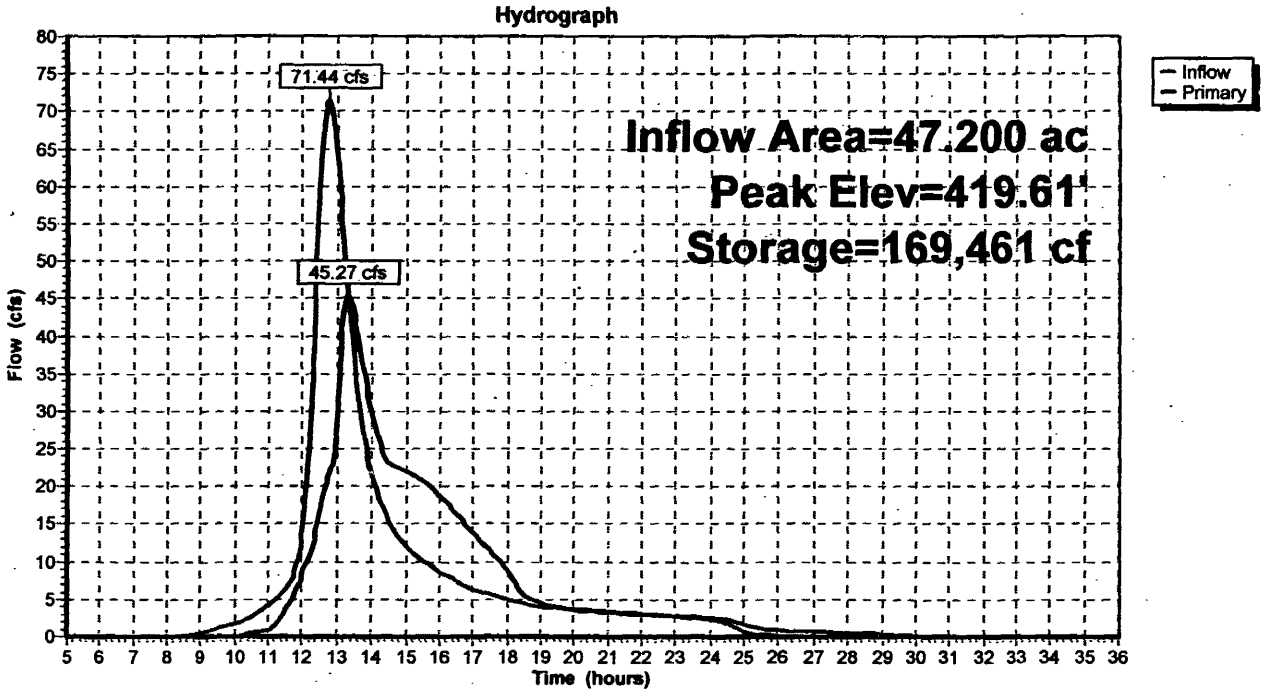
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.00	2,275	224.0	0	0	2,275
414.00	3,737	262.0	5,952	5,952	3,823
415.00	4,553	281.0	4,138	10,090	4,688

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
413.70	2,996	280.0	0	0	2,996
414.00	3,907	422.0	1,032	1,032	10,929
415.00	5,245	469.0	4,560	5,592	14,291
416.00	24,312	728.0	13,616	19,208	38,970
418.00	35,276	927.0	59,249	78,457	65,230
420.00	62,663	1,234.0	96,637	175,094	118,068
421.00	65,991	1,258.0	64,320	239,414	122,988

#	Routing	Invert	Outlet Devices
1	Primary	413.60'	**36.0" x 80.0' long Culvert** CPP, square edge headwall, Ke= 0.500 Outlet Invert= 412.80' S= 0.0100 '/' n= 0.012 Cc= 0.900
2	Device 1	413.70'	**6.0" Vert. Cpv** C= 0.600
3	Device 1	415.00'	**12.0" Vert. 10 yr X 3.00** C= 0.600
4	Device 1	419.00'	**2.50' x 4.00' Horiz. 10/100 yr grate** Limited to weir flow C= 0.600

Primary OutFlow Max=45.15 cfs @ 13.32 hrs HW=419.60' TW=414.36' (Fixed TW Elev= 414.36')
- **1=Culvert** (Passes 45.15 cfs of 72.24 cfs potential flow)
  - **2=Cpv** (Orifice Controls 2.17 cfs @ 11.0 fps)
  - **3=10 yr** (Orifice Controls 22.99 cfs @ 9.8 fps)
  - **4=10/100 yr grate** (Weir Controls 20.00 cfs @ 2.5 fps)

Pond 2P: POND 2



Pond 3P: POND 3

Inflow Area = 53.800 ac, Inflow Depth = 3.39" for 25 YR event
Inflow = 49.04 cfs @ 13.30 hrs, Volume= 15.193 af
Outflow = 48.60 cfs @ 13.36 hrs, Volume= 15.108 af, Atten= 1%, Lag= 3.7 min
Primary = 22.48 cfs @ 13.36 hrs, Volume= 10.250 af
Secondary = 26.12 cfs @ 13.36 hrs, Volume= 4.858 af

Routing by Stor-Ind method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs / 4
Peak Elev= 414.04' @ 13.36 hrs Surf.Area= 22,140 sf Storage= 22,689 cf
Plug-Flow detention time= 19.3 min calculated for 15.108 af (99% of inflow)
Center-of-Mass det. time= 14.9 min (945.2 - 930.3)

#	Invert	Avail.Storage	Storage Description
1	412.80'	44,843 cf	**Custom Stage Data (Irregular)** Listed below

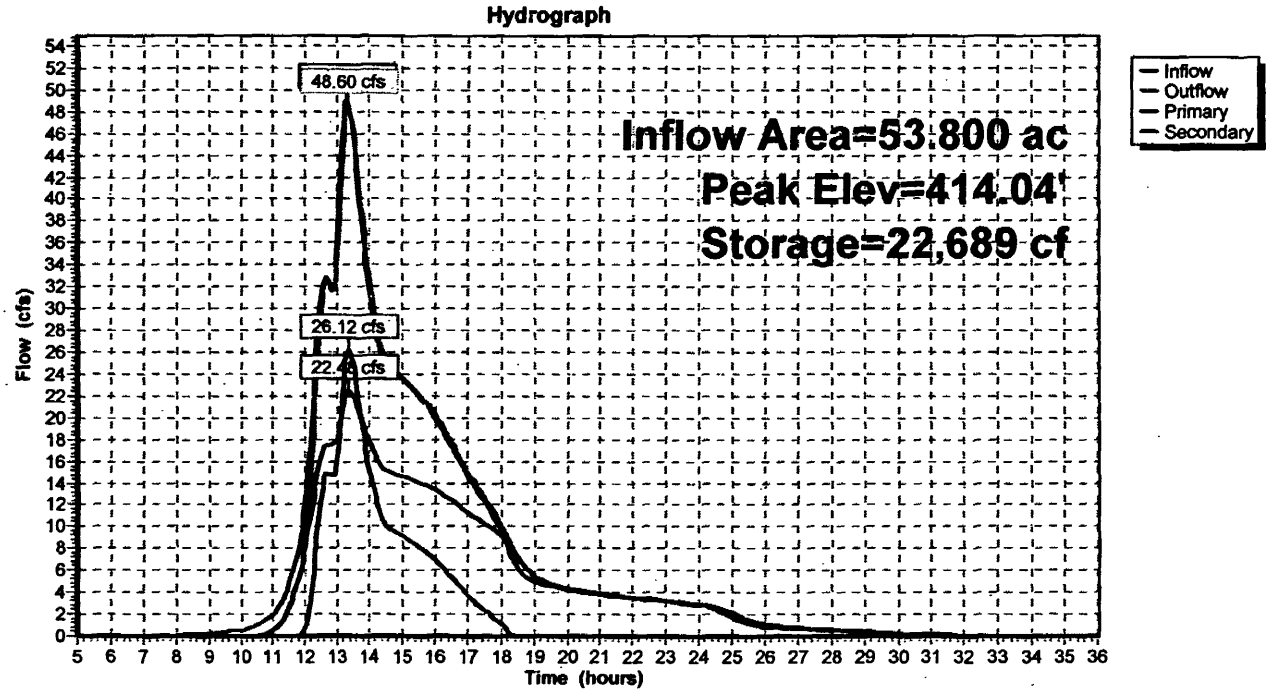
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.80	14,590	551.0	0	0	14,590
414.00	22,071	613.0	21,842	21,842	20,375
415.00	23,943	634.0	23,001	44,843	22,550

#	Routing	Invert	Outlet Devices
1	Primary	413.00'	**8.0' long x 12.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
2	Secondary	413.50'	**25.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=22.47 cfs @ 13.36 hrs HW=414.04' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 22.47 cfs @ 2.7 fps)

Secondary OutFlow Max=26.08 cfs @ 13.36 hrs HW=414.04' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 26.08 cfs @ 1.9 fps)

Pond 3P: POND 3



Subcatchment 1S: POND 1 WQv DA

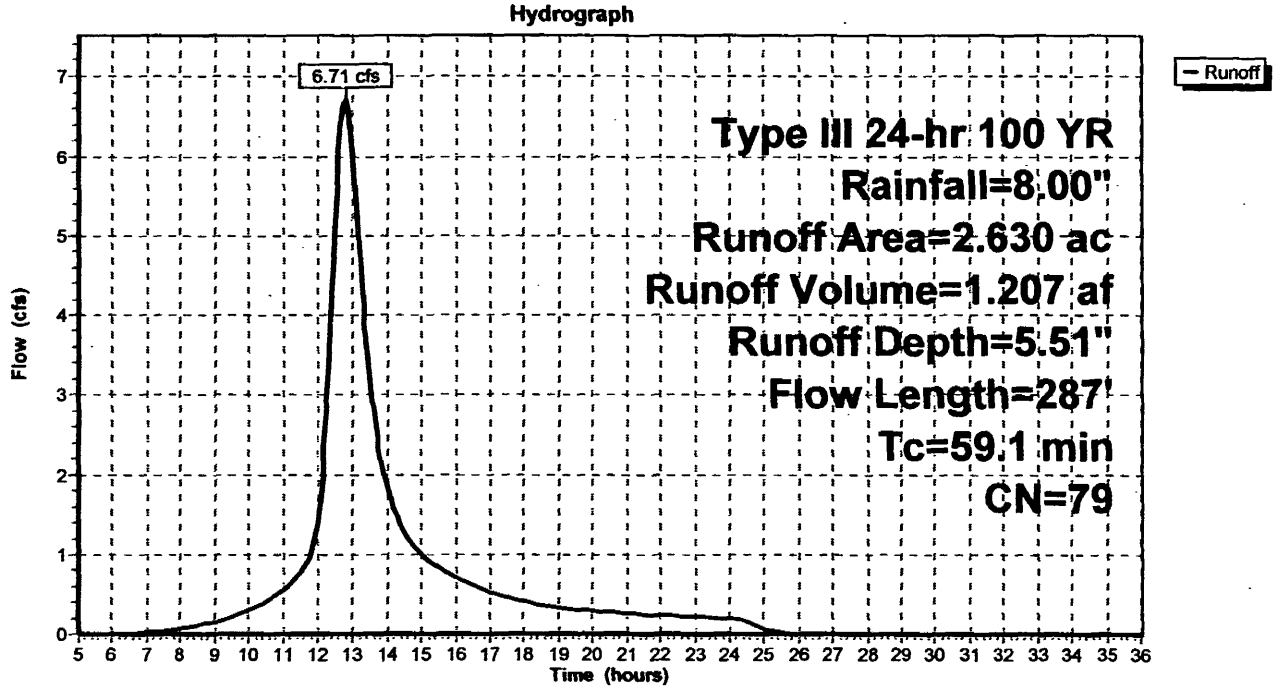
Runoff = 6.71 cfs @ 12.79 hrs, Volume= 1.207 af, Depth= 5.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.00"

Area (ac)	CN	Description
0.910	74	>75% Grass cover, Good, HSG C
1.020	70	Woods, Good, HSG C
0.700	98	Paved parking & roofs
2.630	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
43.6	128	0.0200	0.0		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
15.4	103	0.0020	0.1		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	56	0.0660	17.6	21.57	**Circular Channel (pipe),** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.010
59.1	287	Total			

Subcatchment 1S: POND 1 WQv DA



Subcatchment 1U: ONSITE UNTREATED

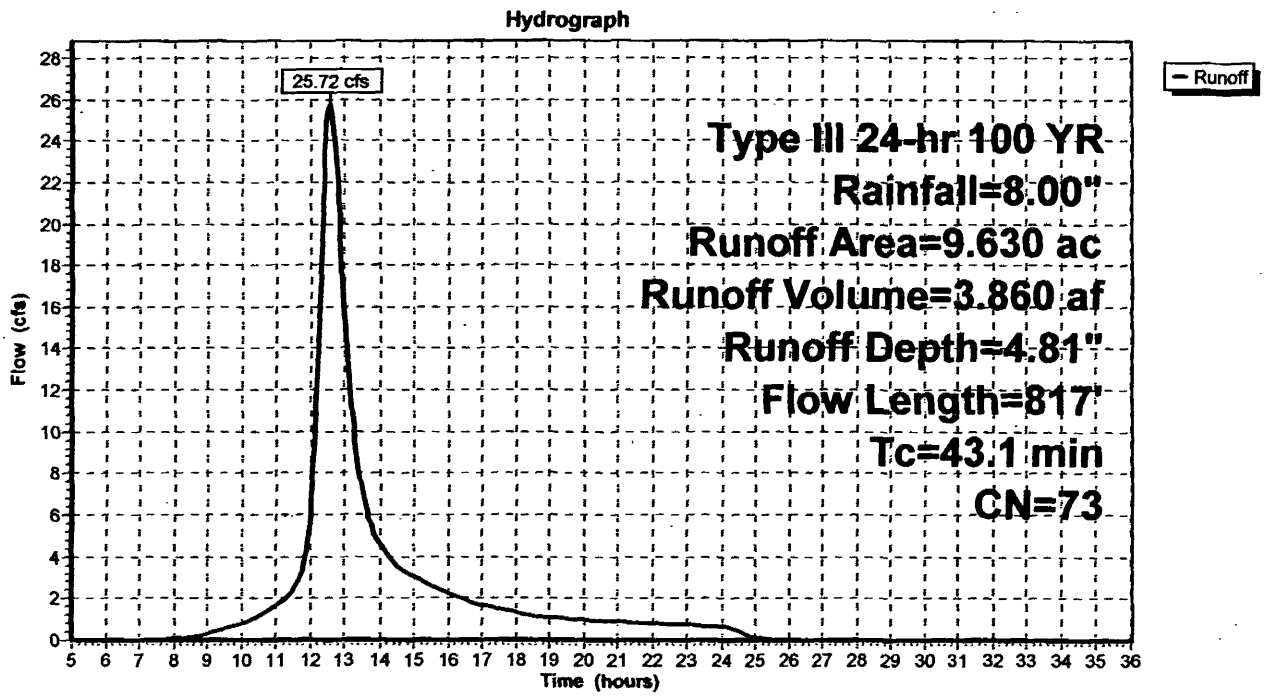
Runoff = 25.72 cfs @ 12.59 hrs, Volume= 3.860 af, Depth= 4.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.00"

Area (ac)	CN	Description
4.410	74	>75% Grass cover, Good, HSG C
0.410	80	>75% Grass cover, Good, HSG D
1.170	70	Woods, Good, HSG C
0.020	77	Woods, Good, HSG D
2.430	65	Brush, Good, HSG C
0.590	73	Brush, Good, HSG D
0.600	98	Paved parking & roofs
9.630	73	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.4	130	0.0346	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
0.4	38	0.0657	1.8		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.3	649	0.0151	1.5	4.71	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.75' Z= 3.0 '/' n= 0.075
43.1	817	Total			

Subcatchment 1U: ONSITE UNTREATED



Subcatchment 2S: POND 2 WQv DA

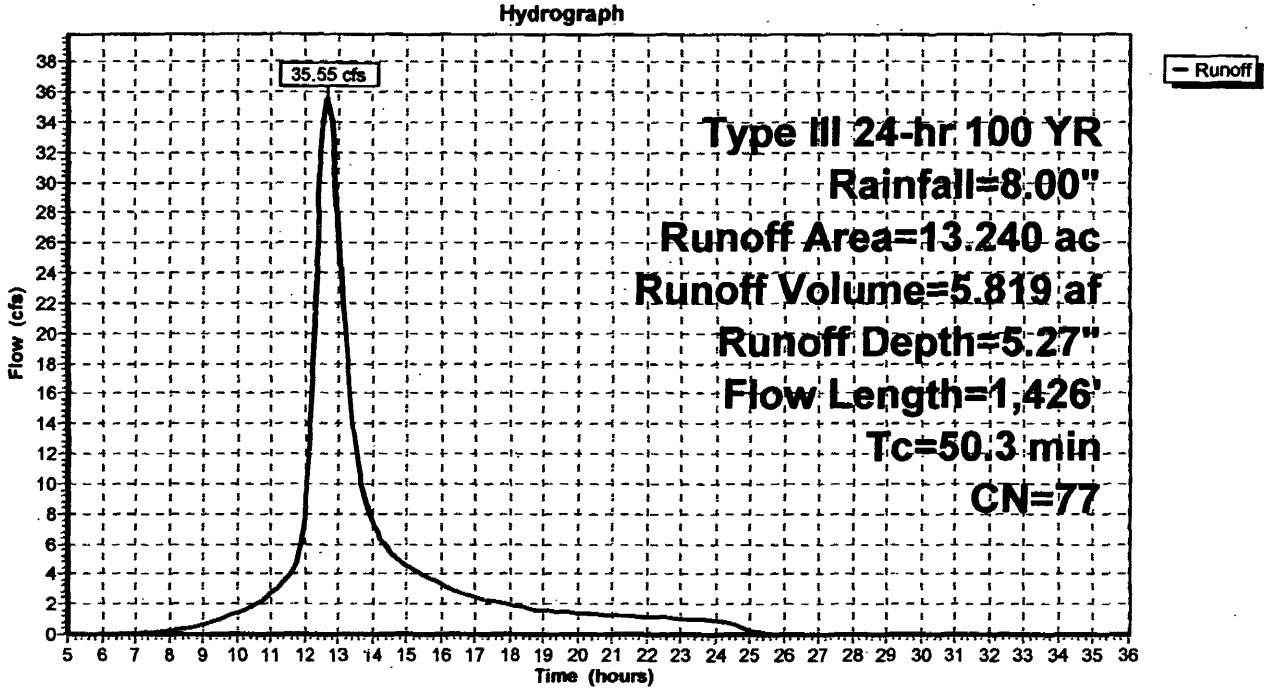
Runoff = 35.55 cfs @ 12.68 hrs, Volume= 5.819 af, Depth= 5.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.00"

Area (ac)	CN	Description
5.190	74	>75% Grass cover, Good, HSG C
1.020	80	>75% Grass cover, Good, HSG D
1.280	70	Woods, Good, HSG C
0.480	65	Brush, Good, HSG C
0.080	73	Brush, Good, HSG D
3.940	79	1 acre lots, 20% imp, HSG C (OFF SITE ONLY)
1.250	98	Paved parking & roofs
13.240	77	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.7	130	0.0230	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
0.8	102	0.1030	2.2		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	76	0.0250	0.8		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.0	366	0.0300	1.2		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	752	0.0266	10.5	18.56	**Circular Channel (pipe),** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
50.3	1,426	Total			

Subcatchment 2S: POND 2 WQv DA



Subcatchment 2U: OFFSITE UNTREATED

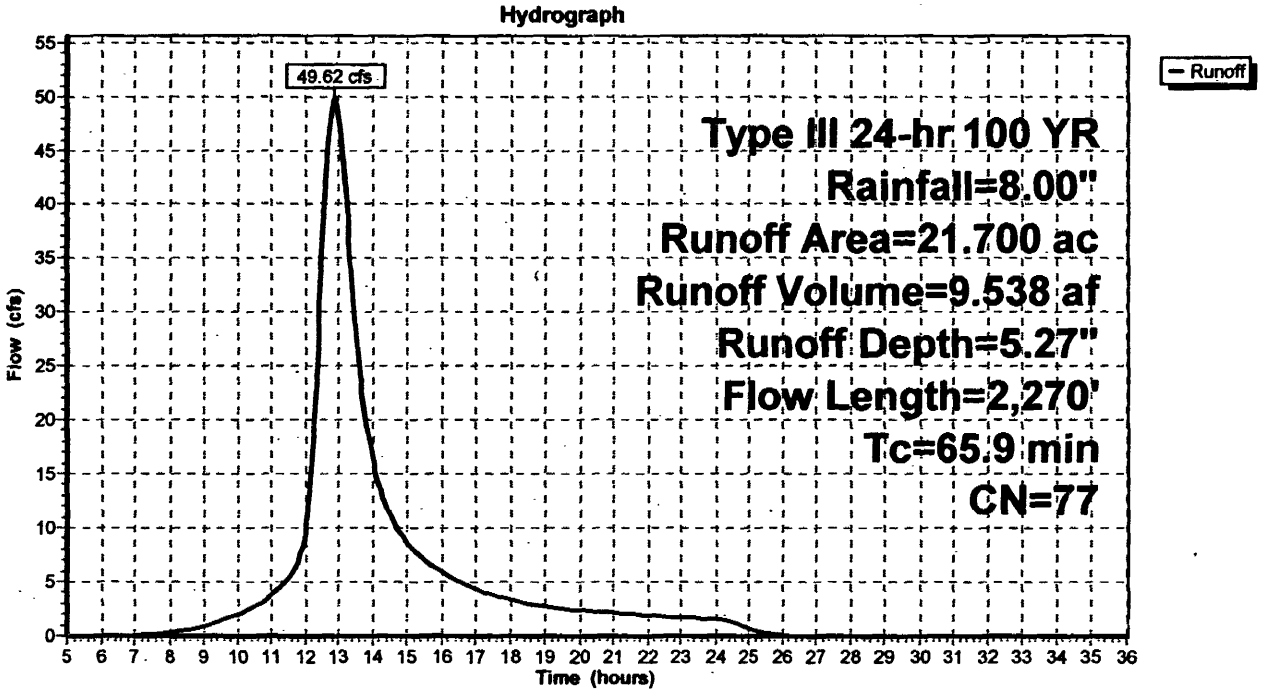
Runoff = 49.62 cfs @ 12.87 hrs, Volume= 9.538 af, Depth= 5.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.00"

Area (ac)	CN	Description
0.900	74	>75% Grass cover, Good, HSG C
5.900	70	Woods, Good, HSG C
14.200	79	1 acre lots, 20% imp, HSG C
0.700	98	Paved parking & roofs
21.700	77	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.0	137	0.0200	0.0		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
5.5	100	0.0146	0.3		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.3	667	0.0480	2.1	3.69	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.50' Z= 3.0 '/' n= 0.075
5.2	551	0.0335	1.8	3.09	**Trap/Vee/Rect Channel Flow,** Bot.W=2.00' D=0.50' Z= 3.0 '/' n= 0.075
0.4	470	0.0255	18.1	174.05	**Circular Channel (pipe),** Diam= 42.0" Area= 9.6 sf Perim= 11.0' r= 0.88' n= 0.012
3.5	345	0.0168	1.6	6.44	**Trap/Vee/Rect Channel Flow,** Bot.W=3.00' D=0.75' Z= 3.0 '/' n= 0.075
65.9	2,270	Total			

Subcatchment 2U: OFFSITE UNTREATED



Subcatchment 3S: POND 3 DA

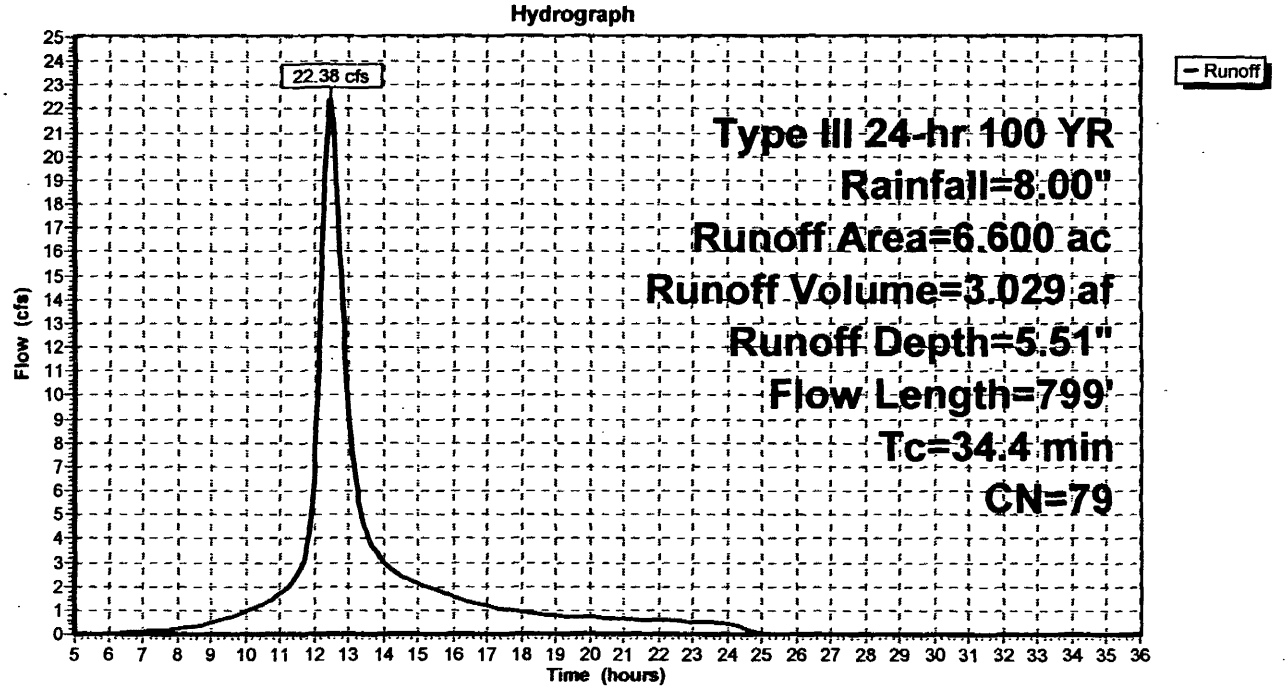
Runoff = 22.38 cfs @ 12.47 hrs, Volume= 3.029 af, Depth= 5.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 YR Rainfall=8.00"

Area (ac)	CN	Description
2.270	74	>75% Grass cover, Good, HSG C
1.570	80	>75% Grass cover, Good, HSG D
0.170	70	Woods, Good, HSG C
1.890	79	1 acre lots, 20% imp, HSG C
0.700	98	Paved parking & roofs
6.600	79	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
28.1	130	0.0615	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
6.3	669	0.0643	1.8		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
34.4	799	Total			

Subcatchment 3S: POND 3 DA



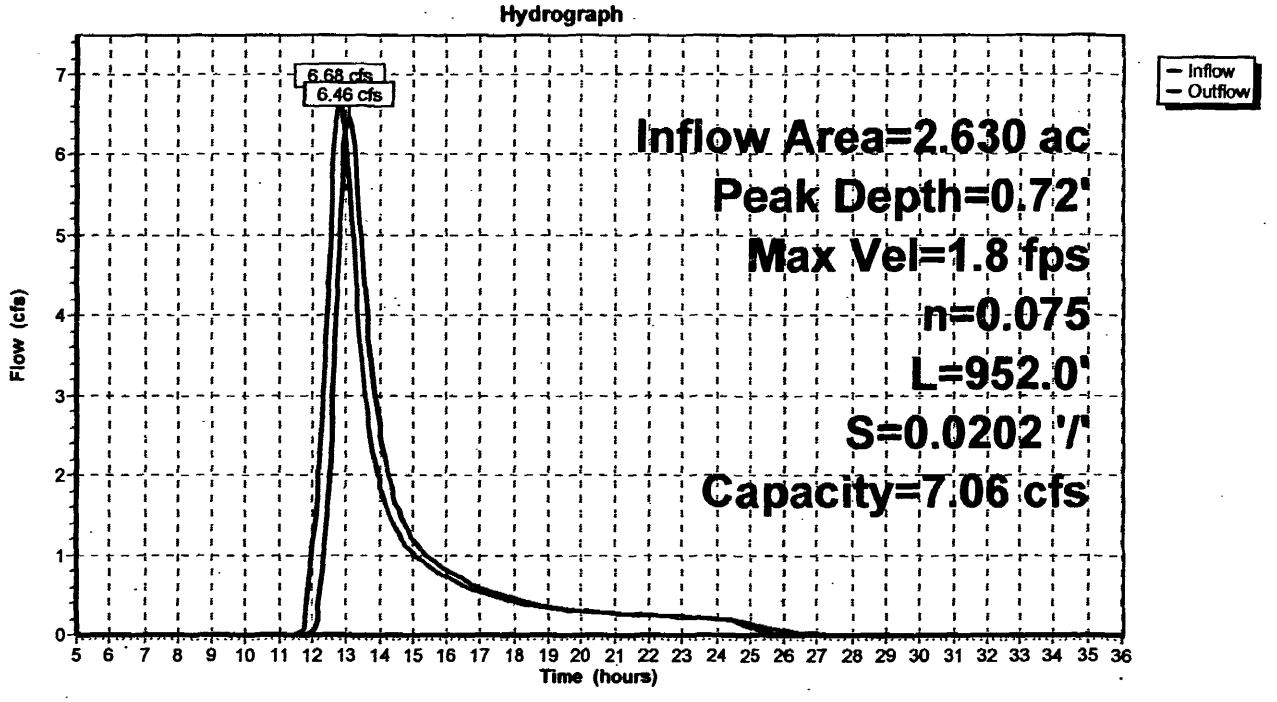
Reach 2R: POND 1 TO POND 2

Inflow Area = 2.630 ac, Inflow Depth = 5.00" for 100 YR event
Inflow = 6.68 cfs @ 12.82 hrs, Volume= 1.096 af
Outflow = 6.46 cfs @ 13.09 hrs, Volume= 1.096 af, Atten= 3%, Lag= 16.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.8 fps, Min. Travel Time= 9.1 min
Avg. Velocity = 0.5 fps, Avg. Travel Time= 29.8 min

Peak Depth= 0.72' @ 12.94 hrs
Capacity at bank full= 7.06 cfs
3.00' x 0.75' deep channel, n= 0.075 Length= 952.0' Slope= 0.0202 '/'
Side Slope Z-value= 3.0 '/'

Reach 2R: POND 1 TO POND 2



Pond 1P: POND 1

Inflow Area = 2.630 ac, Inflow Depth = 5.51" for 100 YR event
Inflow = 6.71 cfs @ 12.79 hrs, Volume= 1.207 af
Outflow = 6.68 cfs @ 12.82 hrs, Volume= 1.096 af, Atten= 0%, Lag= 2.0 min
Primary = 6.68 cfs @ 12.82 hrs, Volume= 1.096 af

Routing by Stor-Ind method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 433.41' @ 12.82 hrs Surf.Area= 4,746 sf Storage= 6,285 cf
Flood Elev= 433.50' Surf.Area= 4,876 sf Storage= 6,600 cf
Plug-Flow detention time= 73.7 min calculated for 1.094 af (91% of inflow)
Center-of-Mass det. time= 28.5 min (883.0 - 854.5)

#	Invert	Avail.Storage	Storage Description
1	429.00'	657 cf	**FOREBAY (Irregular)** Listed below
2	431.00'	7,686 cf	**PERM. POOL (Irregular)** Listed below
		8,343 cf	Total Available Storage

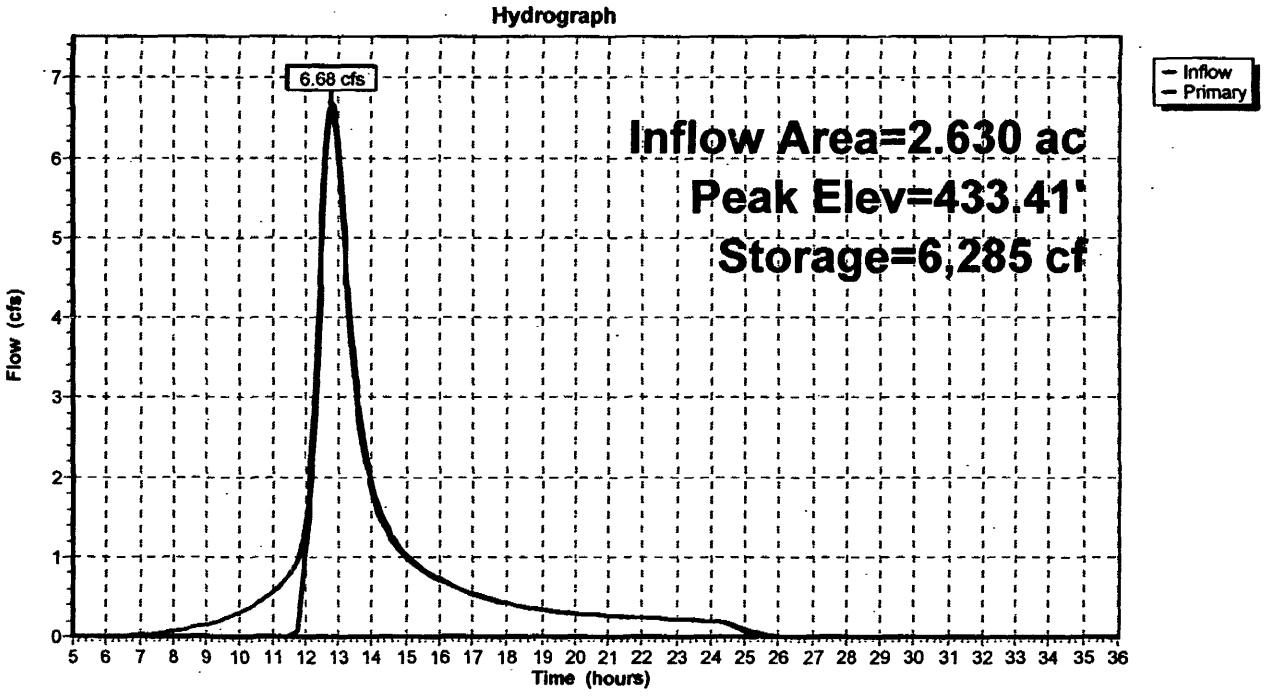
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
429.00	0	0.0	0	0	0
430.00	108	53.0	36	36	225
432.00	574	99.0	621	657	802

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
431.00	0	0.0	0	0	0
432.00	2,150	280.0	717	717	6,240
434.00	5,019	301.0	6,969	7,686	7,372

#	Routing	Invert	Outlet Devices
1	Primary	433.00'	**10.0' long x 8.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
			Coef. (English) 2.43 2.54 2.70 2.69 2.68 2.68 2.66 2.64 2.64 2.64 2.65 2.65 2.66 2.66 2.68 2.70 2.74

Primary OutFlow Max=6.66 cfs @ 12.82 hrs HW=433.41' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 6.66 cfs @ 1.6 fps)

Pond 1P: POND 1



Pond 2P: POND 2

Inflow Area = 47.200 ac, Inflow Depth = 5.16" for 100 YR event
Inflow = 110.68 cfs @ 12.75 hrs, Volume= 20.313 af
Outflow = 78.33 cfs @ 13.20 hrs, Volume= 20.178 af, Atten= 29%, Lag= 27.1 min
Primary = 78.33 cfs @ 13.20 hrs, Volume= 20.178 af

Routing by Stor-Ind method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs
Starting Elev= 413.70' Surf.Area= 7,690 sf Storage= 6,577 cf
Peak Elev= 420.40' @ 13.20 hrs Surf.Area= 70,275 sf Storage= 213,964 cf (207,387 cf above start)
Flood Elev= 421.00' Surf.Area= 72,284 sf Storage= 252,797 cf (246,221 cf above start)
Plug-Flow detention time= 71.8 min calculated for 20.027 af (99% of inflow)
Center-of-Mass det. time= 60.4 min (921.3 - 861.0)

#	Invert	Avail.Storage	Storage Description
1	412.00'	3,293 cf	**Forebay (Irregular)** Listed below
2	412.00'	10,090 cf	**Perm. Pool (Irregular)** Listed below
3	413.70'	239,414 cf	**Main Pool (Irregular)** Listed below
		252,797 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.00	550	98.0	0	0	550
414.00	1,287	141.0	1,786	1,786	1,402
415.00	1,740	160.0	1,508	3,293	1,881

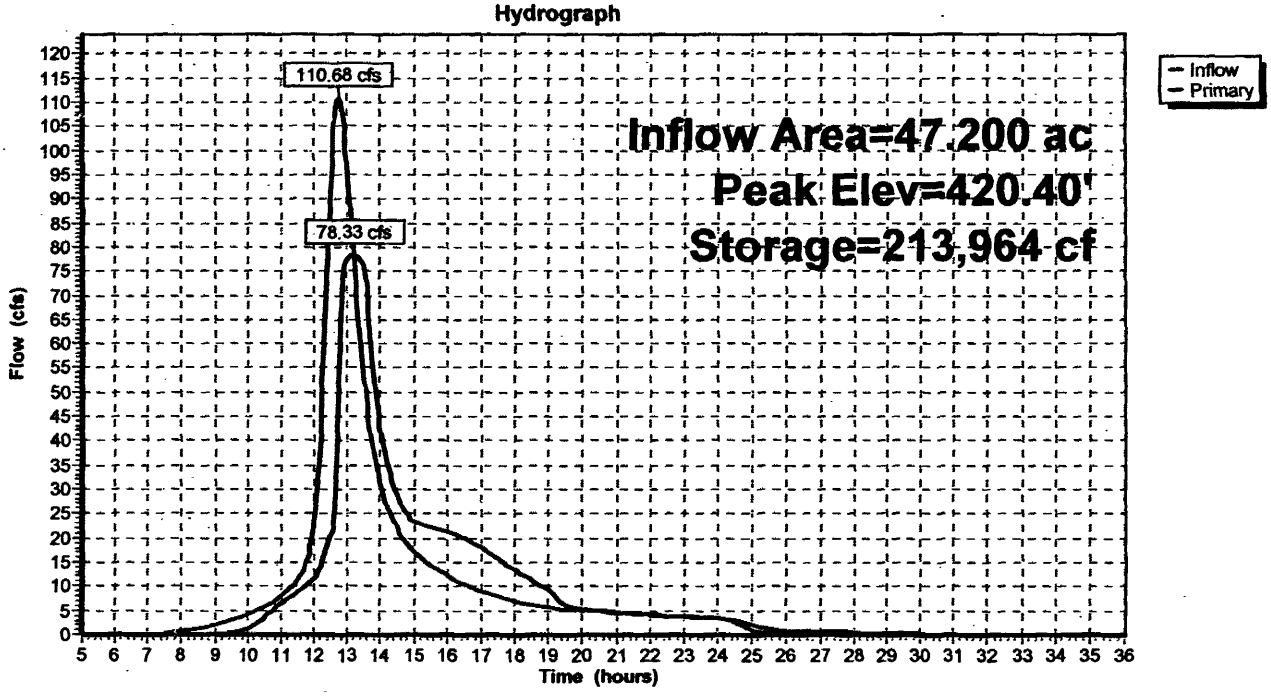
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.00	2,275	224.0	0	0	2,275
414.00	3,737	262.0	5,952	5,952	3,823
415.00	4,553	281.0	4,138	10,090	4,688

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
413.70	2,996	280.0	0	0	2,996
414.00	3,907	422.0	1,032	1,032	10,929
415.00	5,245	469.0	4,560	5,592	14,291
416.00	24,312	728.0	13,616	19,208	38,970
418.00	35,276	927.0	59,249	78,457	65,230
420.00	62,663	1,234.0	96,637	175,094	118,068
421.00	65,991	1,258.0	64,320	239,414	122,988

#	Routing	Invert	Outlet Devices
1	Primary	413.60'	**36.0" x 80.0' long Culvert** CPP, square edge headwall, Ke= 0.500 Outlet Invert= 412.80' S= 0.0100 '/' n= 0.012 Cc= 0.900
2	Device 1	413.70'	**6.0" Vert. Cpv** C= 0.600
3	Device 1	415.00'	**12.0" Vert. 10 yr X 3.00** C= 0.600
4	Device 1	419.00'	**2.50' x 4.00' Horiz. 10/100 yr grate** Limited to weir flow C= 0.600

Primary OutFlow Max=78.32 cfs @ 13.20 hrs HW=420.40' TW=414.36' (Fixed TW Elev= 414.36')
- **1=Culvert** (Inlet Controls 78.32 cfs @ 11.1 fps)
  - **2=Cpv** (Passes < 2.32 cfs potential flow)
  - **3=10 yr** (Passes < 25.10 cfs potential flow)
  - **4=10/100 yr grate** (Passes < 56.89 cfs potential flow)

Pond 2P: POND 2



Pond 3P: POND 3

Inflow Area = 53.800 ac, Inflow Depth = 5.18" for 100 YR event
Inflow = 87.95 cfs @ 12.92 hrs, Volume= 23.207 af
Outflow = 86.77 cfs @ 13.02 hrs, Volume= 23.123 af, Atten= 1%, Lag= 6.1 min
Primary = 33.61 cfs @ 13.02 hrs, Volume= 13.958 af
Secondary = 53.16 cfs @ 13.02 hrs, Volume= 9.165 af

Routing by Stor-Ind method, Time Span= 5.00-36.00 hrs, dt= 0.05 hrs / 4
Peak Elev= 414.36' @ 13.02 hrs Surf.Area= 22,736 sf Storage= 30,018 cf
Plug-Flow detention time= 14.7 min calculated for 23.086 af (99% of inflow)
Center-of-Mass det. time= 12.1 min (921.7 - 909.6)

#	Invert	Avail.Storage	Storage Description
1	412.80'	44,843 cf	**Custom Stage Data (Irregular)** Listed below

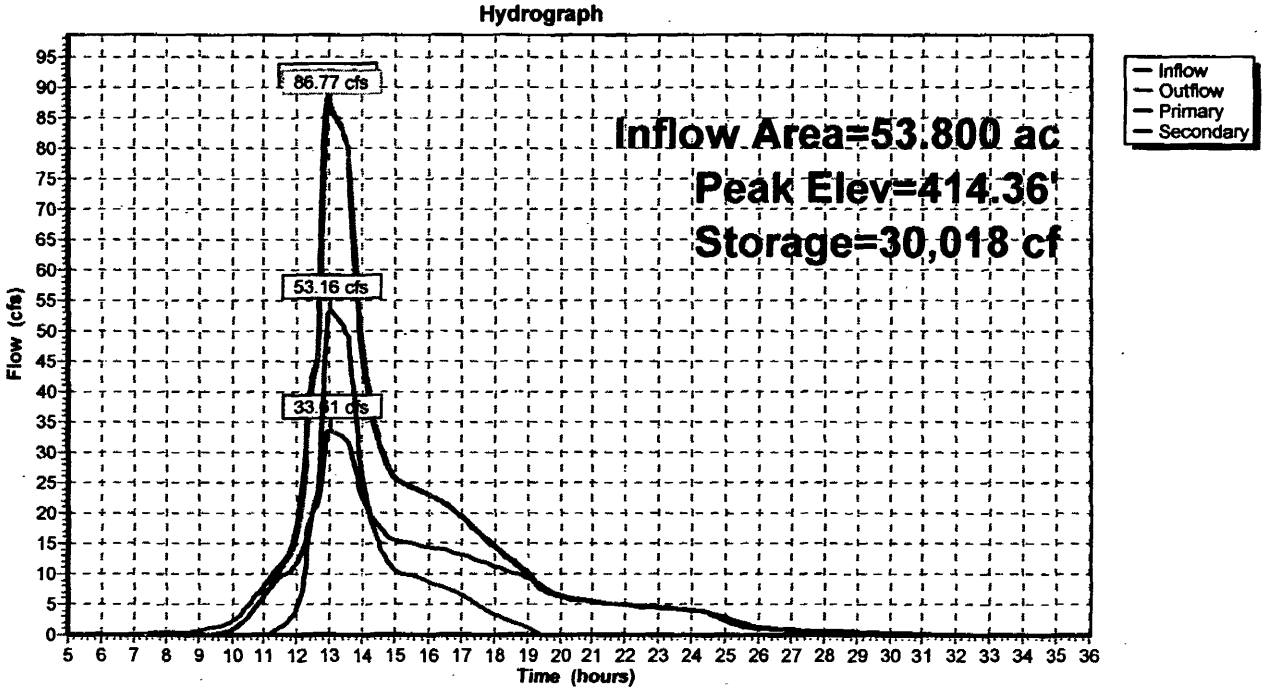
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
412.80	14,590	551.0	0	0	14,590
414.00	22,071	613.0	21,842	21,842	20,375
415.00	23,943	634.0	23,001	44,843	22,550

#	Routing	Invert	Outlet Devices
1	Primary	413.00'	**8.0' long x 12.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
2	Secondary	413.50'	**25.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=33.59 cfs @ 13.02 hrs HW=414.35' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 33.59 cfs @ 3.1 fps)

Secondary OutFlow Max=53.09 cfs @ 13.02 hrs HW=414.35' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 53.09 cfs @ 2.5 fps)

Pond 3P: POND 3



Subcatchment 1S: DA-3

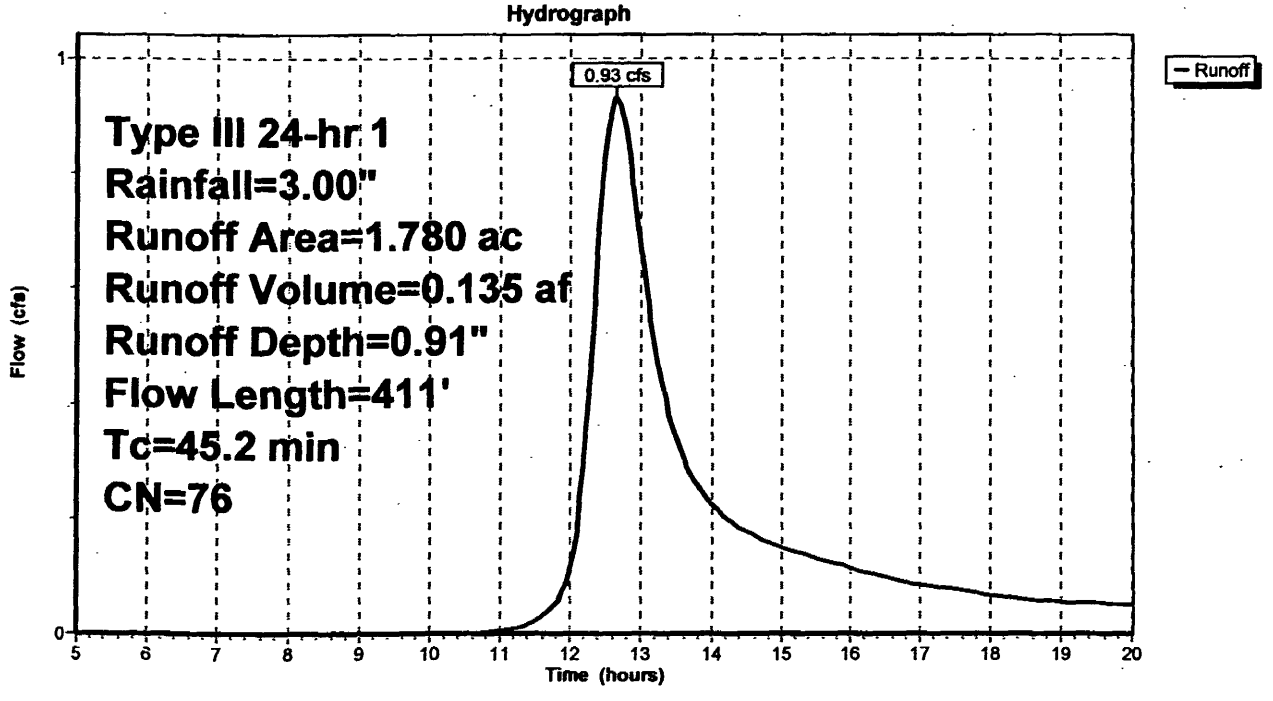
Runoff = 0.93 cfs @ 12.67 hrs, Volume= 0.135 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 Rainfall=3.00"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.630	70	Woods, Good, HSG C
0.240	65	Brush, Good, HSG C
0.440	79	1 acre lots, 20% imp, HSG C
0.240	98	Paved parking & roofs
1.780	76	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.0	130	0.0310	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
5.5	174	0.0110	0.5		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.7	107	0.0090	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
45.2	411	Total			

Subcatchment 1S: DA-3



Subcatchment 1S: DA-3

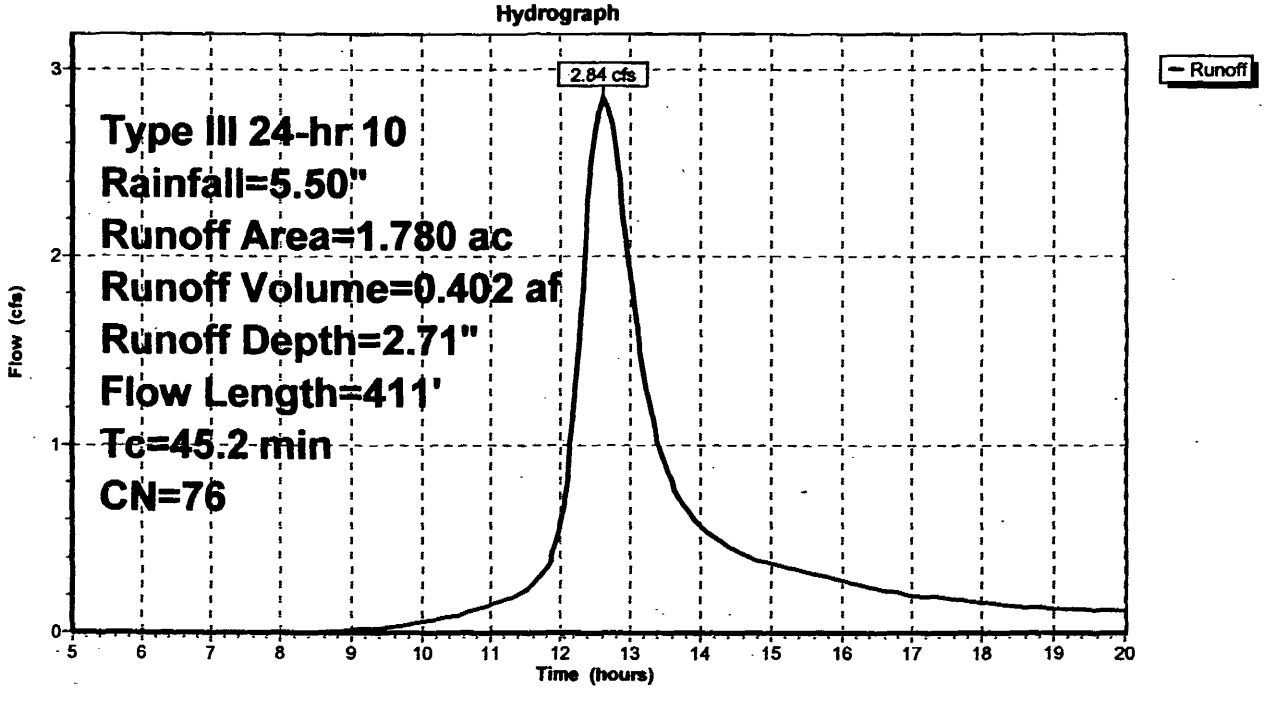
Runoff = 2.84 cfs @ 12.62 hrs, Volume= 0.402 af, Depth= 2.71"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10 Rainfall=5.50"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.630	70	Woods, Good, HSG C
0.240	65	Brush, Good, HSG C
0.440	79	1 acre lots, 20% imp, HSG C
0.240	98	Paved parking & roofs
1.780	76	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.0	130	0.0310	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
5.5	174	0.0110	0.5		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.7	107	0.0090	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
45.2	411	Total			

Subcatchment 1S: DA-3



Subcatchment 1S: DA-3

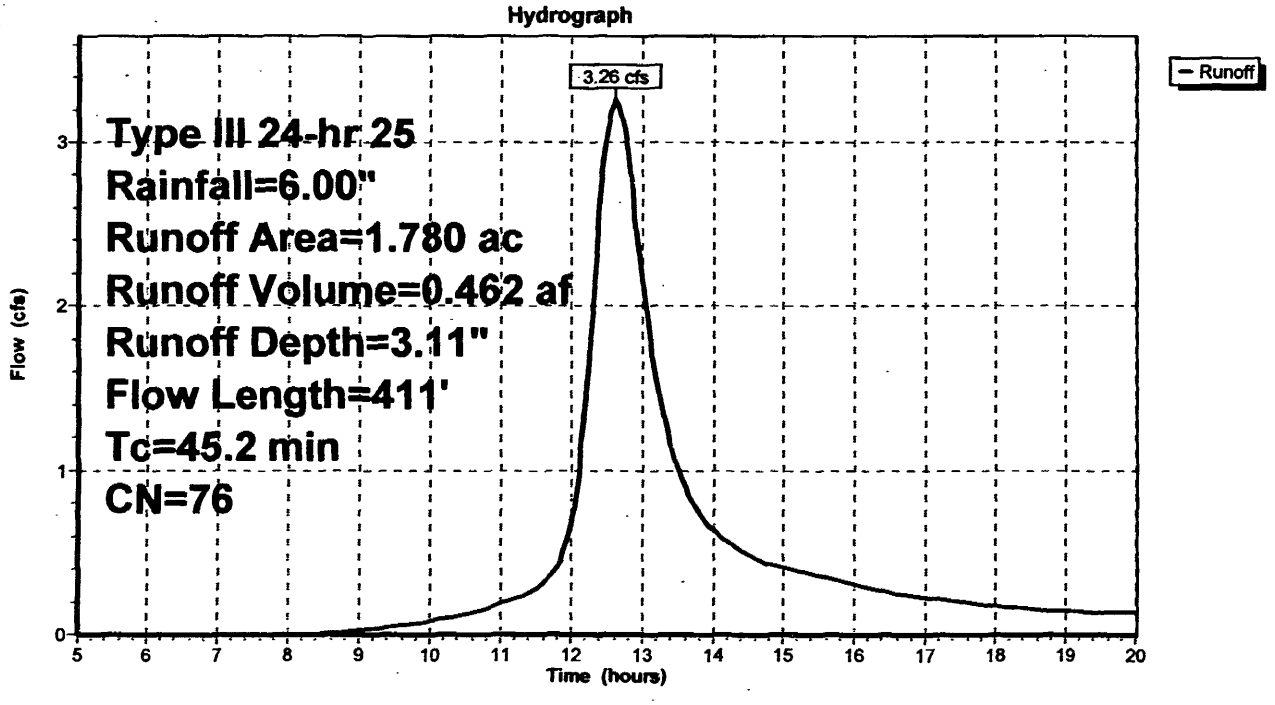
Runoff = 3.26 cfs @ 12.62 hrs, Volume= 0.462 af, Depth= 3.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 Rainfall=6.00"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.630	70	Woods, Good, HSG C
0.240	65	Brush, Good, HSG C
0.440	79	1 acre lots, 20% imp, HSG C
0.240	98	Paved parking & roofs
1.780	76	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.0	130	0.0310	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
5.5	174	0.0110	0.5		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.7	107	0.0090	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
45.2	411	Total			

Subcatchment 1S: DA-3



Subcatchment 1S: DA-3

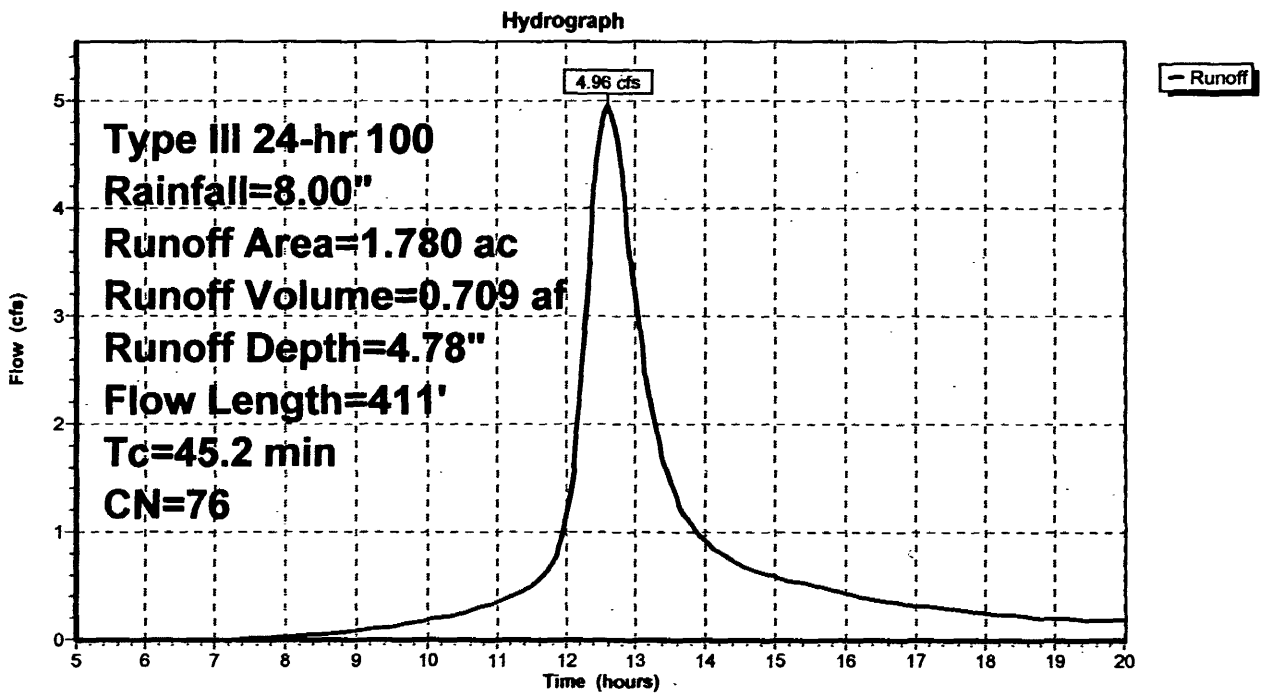
Runoff = 4.96 cfs @ 12.61 hrs, Volume= 0.709 af, Depth= 4.78"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 Rainfall=8.00"

Area (ac)	CN	Description
0.230	74	>75% Grass cover, Good, HSG C
0.630	70	Woods, Good, HSG C
0.240	65	Brush, Good, HSG C
0.440	79	1 acre lots, 20% imp, HSG C
0.240	98	Paved parking & roofs
1.780	76	Weighted Average

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.0	130	0.0310	0.1		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.50"
5.5	174	0.0110	0.5		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.7	107	0.0090	0.7		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
45.2	411	Total			

Subcatchment 1S: DA-3



APPENDIX B-3

WATER QUALITY VOLUME CALCULATIONS

Pin Oak Drive, Spectra Project #02150
Water Quality Volume WQv and Stormwater Control Features

POND-1

Subcat	CB	total Area acres	WQv req'd c.ft.	WQv req'd ac-ft	Impervious acres	%	Rv	P	WQv ac-ft	WQv c.ft.
1S		2.9	5264	0.121	0.510	17.6	0.21	1.20	0.060	2631
Totals		**2.9**	**5264**	**0.121**	**0.51**	**17.6**	**0.21**	**1.20**	**0.060**	**2631**

Stormwater Ponds

Description: Constructed stormwater retention basin that has a permanent pool (or micropool). Runoff from each rain event is detained and treated in the pool through settling and biological uptake mechanisms.

Design: Pocket Pond (P-6)

Pretreatment

Requirement

- max. drainage area	A =	5	ac			✔
- side slopes shall not exceed 3:1 (h:v)						
- min forebay vol 10% of WQv	V =	263	cu.ft. min			
- min forebay depth 4' - 6' each	d =	4	ft			
	A =	66	sf			
- length to width ratio		1.5 / 1				

Design

- forebay volume	d =	4	ft		
	$w_{roughly}$ =	[redacted]	ft		
	$l_{roughly}$ =	12	ft		
	A =	96	sf		
	V =	**384**	**cu.ft.**	**>**	**263 cu.ft.** ✔

Treatment

Requirement

- 1:100 surface:drainage area	A =	1263	sf min		
- min permanent pool 50% of WQv	V =	1316	cu.ft. min		
- max extended detention 50% of WQv	V_{ED} =	1316	cu.ft. max		
- length to width ratio		1.5 / 1			

Design

- permanent pool	d =	[redacted]	ft		
	$w_{roughly}$ =	[redacted]	ft		
	$l_{roughly}$ =	33	ft		
	A =	726	sf min		
	V =	**1452**	**cu.ft.**	**>**	**1316 cu.ft.** ✔
- extended detention	d_{ED} =	[redacted]	ft		
	$w_{roughly}$ =	[redacted]	ft		
	$l_{roughly}$ =	47	ft		
	A_{ED} =	1442	sf	>	1263 sf min ✔
	V =	**2883**	**cu.ft.**	**<**	**1316 cu.ft.** ✔

Pin Oak Drive, Spectra Project #02150
Water Quality Volume WQv and Stormwater Control Features

POND-2

Subcat	CB	total Area acres	WQv c.ft.	WQv ac-ft	Impervious acres	%	Rv	P	WQv ac-ft	WQv c.ft.
2S		13.23	24012	0.551	1.250	9.4	0.20	1.20	0.265	11526
Totals		**13.23**	**24012**	**0.551**	**1.25**	**9.4**	**0.20**	**1.20**	**0.265**	**11526**

Stormwater Ponds

Description: Constructed stormwater retention basin that has a permanent pool (or micropool) Runoff from each rain event is detained and treated in the pool through settling and biological uptake mechanisms.

Design: **Micropool Extended Detention (P-1)**

Pretreatment

Requirement

- min. drainage area	A =	10 ac				✔
- side slopes shall not exceed 3:1 (h:v)						
- min forebay vol 10% of WQv	V =	1153 cu.ft. min				
- min forebay depth 4' - 6' each	d =	4 ft				
	A =	288 sf				
- length to width ratio		1.5 / 1				

Design

- forebay volume	d =	3 ft			
	$W_{roughly}$ =	33 ft			
	$l_{roughly}$ =	53 ft			
	A =	1740 sf			
	V =	**5220 cu.ft.**	**>**	**1153 cu.ft.**	✔

Treatment

Requirement

- 1:100 surface:drainage area	A =	5763 sf min			
- min permanent pool 20% of WQv	V =	2305 cu.ft. min			
- max extended detention 80% of WQv	V_{ED} =	9221 cu.ft. max			
- length to width ratio		1.5 / 1			

Design

- permanent pool	d =	3 ft			
	$W_{roughly}$ =	44 ft			
	$l_{roughly}$ =	108 ft			
	A =	4553 sf min			
	V =	**13659 cu.ft.**	**>**	**2305 cu.ft.**	✔
- extended detention	d_{ED} =	0 ft			
	$W_{roughly}$ =	44 ft			
	$l_{roughly}$ =	108 ft			
	A_{ED} =	6293 sf	**>**	**5763 sf min**	✔
	V =	**0 cu.ft.**	**<**	**9221 cu.ft.**	✔

Pin Oak Drive, Spectra Project #02150
Orifice Sizing Calculations

Detention Pond 2: Calculations

Water Quality Volume (WQv)

					Comments
WQv =	11526	cf			From WQv calc sheet
WQv-ED =	0	cf			Portion of WQv above permanent pool
					Permanent pool contains 100% of WQv therefore, no WQv-ED oriface is required

Requirement:

- provide 24 hr detention of WQv-ED — WQv-ED Qave = 0 cfs — Average flow rate as WQv-ED released over 24 hrs

Design:

- Size oriface based on WQv-ED Qave

Oriface Inv. =	413.7		
Head =	0	ft	
A =	#DIV/0!	sf	
Dia. =	#DIV/0!	in	

Channel Protection Volume (Cpv)

Requirement:

- provide 24-hr detention of 1-yr, 24-hr storm

Design:

- Determine Cpv

Ave. CN =	77		
Ia =	0.597		
Ia/P =	0.20		P = 3.0" for 1 yr, 24 hr storm in Town of New Windsor
Tc =	0.838	hr	From HydroCAD proposed conditions model
qu =	295	csm/in	From Figure 4-III in TR-55
qo/qi =	0.06		From Figure 8.5 in SWDM
Vs/Vr =	0.603		
Q =	0.96	in	Runoff Depth for 1 yr, 24 hr storm
Cpv =	0.91	ac-ft	
Cpv Qave =	0.46	cfs	Average flow rate as Cpv released over 24 hrs

- Size oriface based on Cpv Qave

Oriface Inv. =	413.7		
Head =	2.3	ft	Cpv provided at EL 416.2
A =	0.06	sf	
Dia. =	3.4	in	<4", therefore Cpv not required

Pin Oak Drive, Spectra Project #02150
Water Quality Volume WQv and Stormwater Control Features

POND-3

Subcat	CB	total Area	WQv 1in	WQv 1in	Impervious	%	Rv	P	WQv	WQv
		acres	c.ft.	ac-ft	acres				ac-ft	c.ft.
3S		6.52	11834	0.272	0.630	9.7	0.20	1.20	0.130	5680
Totals		6.52	11834	0.272	0.63	9.7	0.20	1.20	0.130	5680

Stormwater Ponds

Description: Constructed stormwater retention basin that has a permanent pool (or micropool). Runoff from each rain event is detained and treated in the pool through settling and biological uptake mechanisms.

Design: **Micropool Extended Detention (P-1)**

Pretreatment

Requirement

- min. drainage area	A =	10 ac			✔
- side slopes shall not exceed 3:1 (h:v)					
- min forebay vol 10% of WQv	V =	568 cu.ft. min			
- min forebay depth 4' - 6' each	d =	4 ft			
	A =	142 sf			
- length to width ratio		1.5 / 1			

Design

- forebay volume	d =	4 ft			
	$W_{roughly}$ =	[redacted] ft			
	$l_{roughly}$ =	55 ft			
	A =	0 sf			
	V =	**0 cu.ft.**	**>**	**568 cu.ft.**	✔

Treatment

Requirement

- 1:100 surface:drainage area	A =	2840 sf min			
- min permanent pool 20% of WQv	V =	1136 cu.ft. min			
- max extended detention 80% of WQv	V_{ED} =	4544 cu.ft. max			
- length to width ratio		1.5 / 1			

Design

- permanent pool	d =	[redacted] ft			
	$W_{roughly}$ =	[redacted] ft			
	$l_{roughly}$ =	220 ft			
	A =	14590 sf min			
	V =	**43770 cu.ft.**	**>**	**1136 cu.ft.**	✔
- extended detention	d_{ED} =	[redacted] ft			
	$W_{roughly}$ =	[redacted] ft			
	$l_{roughly}$ =	160 ft			
	A_{ED} =	14590 sf	**>**	**2840 sf min**	✔
	V =	**0 cu.ft.**	**<**	**4544 cu.ft.**	✔

APPENDIX B-4

POLLUTANT LOADING CALCULATIONS

PRELIMINARY POLLUTANT LOADING CALCULATIONS

BASED ON "SIMPLE METHOD" ("REDUCING THE IMPACTS OF STORMWATER RUNOFF FROM NEW DEVELOPMENT", NYSDEC)

		P rainfall depth	Pj corr. factor							
EXISTING		39.28	1.0							
design point		imp. area	A area	Ia % imp.	Rv runoff coef.	R	C concentration	%pollut. removed	% pollutant not removed	L no treat
DP 1	TSS	2.8	43.62	6.42%	0.11	4.23	54.50			
PROPOSED: TREATED AREA										
DP 1	TSS	5.39	43.82	12.30%	0.16	6.31	54.50	80.00	20.00	3407.00

Note:

L = 0.226*R*C*A

L = Annual loading (lbs) at design point

R = Annual runoff (inches)

C = Pollutant concentration (mg/l)

A = Area (acres)

0.226 = Unit conversion factor

R = P*Pj*Rv

P = Annual rainfall (inches)

Pj = Fraction of annual rainfall events that produce runoff (usually 0.9)

Rv = Runoff coefficient

Rv = 0.05 + 0,9Ia

Ia = Impervious fraction

Rpol.rem. = (%

Rpol.rem. = Poll

SPECTRA
ENGINEERING, ARCHITECTURE & SURVEYING, P.C.

September 10, 2004

Town of New Windsor
Planning Board
555 Union Avenue
New Windsor, NY 12553

RE: VALLEY FIELDS ESTATES – LANDS OF SAWYER
81 Bethlehem Road
Section 57 – Block 1 – Lot 23.24

Dear Chairman & Members of the Board,

Spectra Engineering, Architecture and Surveying, P.C., on behalf of the owner Marjorie Sawyer, is pleased to submit the following documents in support of the Major Subdivision Preliminary Plat Application:

Preliminary Subdivision Plat – 5 sheet plan set-	10 copies
Stormwater Management Plan-	1 copy
Letter to Mr. Kroll, dated Sept. 3, 2004	1 copy

This application has changed significantly since it was last before the Board in April of this year. The road layout has been reconfigured. The lot layout has been revised and the lot count has been reduced by two lots to the present 14 lots. These changes are a result of comments received by the applicant and field data recently obtained of the sewage disposal areas.

A copy of the Stormwater Management Plan has been provided to Patrick Hines of McGoey, Hauser and Edsall for their review. A copy of this letter and a set of plans have also been provided to Mr. Edsall for his review.

We are in receipt of a letter from Mark Edsall dated 28 April 2004 containing comments relating to the previous plan set. The following summarizes his letter and the action taken by Spectra and the applicant:

1. The plan did not reflect the maximum permitted height or minimum net lot area: Spectra has added this information to the current plan noting the maximum building height and the net lot area for each lot of the subdivision.

Lot 10 appears to have insufficient width: Spectra has revised the subdivision layout, each proposed lot now meets the minimum lot width required by zoning.

The sketch plan proposed two culd-e-sacs, with one serving a single lot: Spectra has eliminated the second culd-e-sac from the preliminary subdivision plat.

2. The recommendation by the Orange County Department of Planning to provide a cross connection between Jackson Ave. and Bethlehem Road is not recommended. The Highway Superintendent is requested to offer his opinion to this connection: Mr. Sawyer has made inquiry to Mr. Kroll about this and other issues. A copy of his letter is enclosed.

3. The sketch plan did not include details of construction and needs revision to more clearly delineate property lines: Spectra has greatly clarified the subdivision drawings. A separate sheet has been provided to demonstrate the boundaries and zoning requirements of the proposed lots and parcels. A sheet of construction details has also been added for the board's consideration.

4. The subdivision will require the approval of the Orange County Department of Health following preliminary approval: Spectra has performed deep soil and percolation tests on each lot of this subdivision. The Preliminary Subdivision Plat set contains the designs for individual subsurface sewage disposal systems for each lot. Provisions for individual drilled wells are also include in the layout.

5. Prior to scheduling a public hearing the applicant must provide a complete set of plans and obtain the approval of the Highway Superintendent: Spectra believes the current plan set satisfactorily addresses the requirements for Preliminary Subdivision. Mr. Sawyer has provided a set of recent drawings to the Highway Superintendent for his consideration.

6. The 911 policy is to require a street name and addressing of the lots during the Preliminary approval processes: Mr. Sawyer has obtained 911 addresses for the parcels shown on the previous plan. That layout has changed and the addresses are no longer valid. If the board is satisfied with the current layout Spectra will coordinate with the Town Fire Inspector to update the 911 addressees already provided. If acceptable to the Board and the 911 address system, the Sawyers wish the new subdivision road to be known as Pin Oak Drive.

This concludes Mr. Edsall's comments from his April memo. On August 18, 2004 Spectra and the applicant meet with Mr. Edsall and reviewed the new layout and Preliminary Subdivision Plat set of drawings. As a result of our meeting the plans were further refined and separate parcels are now provided for the stormwater management basins.

Also as a result of that meeting Spectra and the applicant are now aware that Mr. Edsall will recommend that a stormwater management district be formed incorporating the stormwater improvements proposed as part of this subdivision. The applicant is in favor of this proposal and would like the board to consider beginning the process as soon as possible.

We look forward to presenting the Preliminary Plat to the Board at their next available meeting. At which time we are hopeful to discuss the formation of the stormwater district and schedule a date for the public hearing.

If you should have any question please do not hesitate to contact this office.

Sincerely,

SPECTRA ENGINEERING, ARCHITECTURE AND SURVEYING, P.C.

Kurt Schollmeyer, P.E.
Associate Engineer

N:\2002\02150 Sawyer\Correspondence\Planning Board 9-08-04.doc

COPY

Chester and Marjorie Sawyer
DBA Valley Fields Estates
81 Bethlehem Road,
New Windsor, NY 12553

September 3, 2004

Mr. Henry Kroll
Superintendent of Highways
Union Avenue
New Windsor, NY 12553

Dear Mr Kroll,
Please review the attatched plans which are designed to meet all requirements of the codes and bulk tables in effect for the Town of New Windsor for our 14 Lot Sub Division.

30 foot Roadway (standard)
Culdesack (standard)
Belgian Block Curbs
Culverts
Storm Water Management
Driveways and Curb Cuts
Sidewalks (standard)
Street Lighting

Please note that the Pin Oak Drive entrance from Jackson Avenue has minimal natural drainage even under severe conditions, but will still require an effective culvert.

a. There is only a slight elevation drop to the South, and it will be difficult to utilize the standard 18" pipe with a 24" cover as the water will collect in the depression and freeze in the Winter.

b. an open culvert with a grating top would be effective, but a hazard to the Snow Plow equipment.

c. Request your consideration and support of a rectangular reinforced heavy duty concrete culvert at road level, for the full width of the entrance, with a grade to insure a free flow to daylite.

The Underground Utilities Services will be coordinated by C H Energy Group (Central Hudson) and installed in accordance with all the requirements of the Town.

The Towns Consulting Engineers are reviewing the Stormwater Managment Plan, which includes demarcation of the affected properties, as well as adequate access for future maintenance.

The Orange County Planning Department has reccomended a though road from Bethlehem Road to Jackson Avenue. Although it is not impossible, there is concern about the excessive grade to overcome, and Site Line as well. They indicated need for a responce, which would be better received from your office.

We will keep you aware of any information you may need as this project progresses. We want this Development to be done properly for the benefit of those Families that locate here and as trouble free as possible for the future Service and Maintenance by your Department.

My Wife Marge and I plan on residing here for the rest of our lives and have a sense of pride in what this completed Sub Division will bring to the Community.

Sincerely,

Chet & Marge

Chet and Marge Sawyer

cc: Mark Edsall, PE
Kurt Schollmeyer, PE
Pat Hines, McGoey, Hauser & Edsall

96-04 03-33
03-32 03-32
05-1

Map Number 894-07 City [ ] Town [X] New Windsor

Section 4 Block 1 Lot 5.22 Village [ ]

Title: Wal-Mart Real Estate Trust

Dated: 8-31-07 Filed 11-23-07

Approved by Gerard Argento

on 11-9-07

Record Owner Same As Above

DONNA L. BENSON
Orange County Clerk

TOTAL: $20.00

RECORDED/FILED
11/23/2007/ 11:16:49
DONNA L. BENSON
County Clerk
ORANGE COUNTY, NY
FILE # 200701263 7
MAPS / BK 02007 PG 0894
RECORDING FEES 20.00
Receipt#815399 patti

RECORDED/FILED
11/23/2007/ 11:16:49
DONNA L. BENSON
County Clerk
ORANGE COUNTY, NY
FILE # 200701263 7
MAPS / BK 02007 PG 0894
RECORDING FEES 20.00
Receipt#815399 patti

Map Number 1005-04 City [ ] New Windsor
Section 4 Block 1 Lot ~~5.2~~ 5.1 & 5.2 Town [X] Village [ ]

Title: Wal-Mart Retail Facility Expansion
lot line chg

Dated: 7-8-04 Filed 12-22-04

Approved by James Petro, Jr

on 11-19-04

Record Owner Wal-Mart Stores East L.P.

DONNA L. BENSON
Orange County Clerk

(2 Sheets) Total 20.00
Signed 3.00

$ 23.00

RECEIVED
JAN 4 2005
TOWN CLERK'S OFFICE

RECORDED/FILED ORANGE COUNTY
BOOK 02004 PAGE 1005
12/22/2004/ 10:52:07
FILE NUMBER 20040145820
RECEIPT#357857 patti

PLANNING BOARD
TOWN OF NEW WINDSOR

AS OF: 12/15/2004 PAGE: 1

LISTING OF PLANNING BOARD**ACTIONS**

STAGE: STATUS [Open, Withd]
A [Disap, Appr]

FOR PROJECT NUMBER: 3-32
NAME: SUBDIVISION FOR WAL-MART EXPANSION PA2003-1187
APPLICANT: APD ENGINEERING (FOR WAL-MART STORES)

--DATE--	MEETING-PURPOSE	ACTION-TAKEN
11/19/2004	PLANS STAMPED	APPROVED
05/12/2004	P.B. APPEARANCE- PUB HEARING	CL PH: APPR COND . ACCEPTED RESOLUTION AS WRITTEN - HENRY TO LOOK AT FINAL PLAN . FOR APPROVAL OF LINER ROAD
03/24/2004	P.B. APPEARANCE	WVED PH: RETURN . NEG DEC ACCEPTED AS PRESENTED TO TOWN OF NEWBURGH FOR SITE . PLAN AND LL CHG TOGETHER
10/22/2003	P.B. APPEARANCE	ADD FORTH PARCEL . ADD FOURTH PARCEL TO APPLICATION AND MAP - NEED PLAN FOR . L.L. CHANGE ONLY
10/01/2003	WORK SHOP APPEARANCE	SUBMIT

Plans in roll with Site Plan (03-33)

Town of New Windsor

555 Union Avenue
New Windsor, New York 12553
Telephone: (845) 563-4615
Fax: (845) 563-4695

OFFICE OF THE PLANNING BOARD

October 12, 2004

Wal-Mart Stores, Inc.
Sam M. Walton Developmental Complex
2001 SE 10th Street
Bentonville, AR 72716

SUBJECT: #03-32 WALMART LOT LINE CHANGE

Dear Sir:

Please find attached printouts of fees due for subject project. There is a balance remaining in the escrow account that will be returned to the applicant.

Please contact your client, the applicant, and ask that payment be submitted in separate checks, payable to the Town of New Windsor, as follows:

Check #1 – Approval Fee.....$ 150.00

Upon receipt of this check I will have the plans stamped and signed approved.

If you have any questions in this regard, please contact my office.

Very truly yours,

Myra Mason

Myra L. Mason, Secretary To The
NEW WINDSOR PLANNING BOARD

MLM

PLANNING BOARD
TOWN OF NEW WINDSOR

AS OF: 10/12/2004 PAGE: 1

LISTING OF PLANNING BOARD **FEES**
APPROVAL

FOR PROJECT NUMBER: 3-32
NAME: SUBDIVISION FOR WAL-MART EXPANSION PA2003-1187
APPLICANT: APD ENGINEERING (FOR WAL-MART STORES)

--DATE--	DESCRIPTION---------	TRANS	--AMT-CHG	-AMT-PAID	--BAL-DUE
10/06/2004	APPROVAL FEE	CHG	150.00		
		TOTAL:	150.00	0.00	150.00

Check #1

PLANNING BOARD
TOWN OF NEW WINDSOR

AS OF: 10/12/2004 PAGE: 1

LISTING OF PLANNING BOARD **FEES**
ESCROW

FOR PROJECT NUMBER: 3-32
NAME: SUBDIVISION FOR WAL-MART EXPANSION PA2003-1187
APPLICANT: APD ENGINEERING (FOR WAL-MART STORES)

--DATE--	DESCRIPTION---------	TRANS	--AMT-CHG	-AMT-PAID	--BAL-DUE
10/15/2003	REC. CK. #7988	PAID		1200.00	
10/22/2003	P.B. ATTY. FEE	CHG	35.00		
10/22/2003	P.B. MINUTES	CHG	54.00		
03/24/2004	P.B. ATTY. FEE	CHG	35.00		
03/24/2004	P.B. MINUTES	CHG	38.50		
05/12/2004	P.B. ATTY. FEE	CHG	35.00		
05/12/2004	P.B. MINUTES	CHG	38.50		
10/06/2004	P.B. ENGINEER FEE	CHG	382.90		
		TOTAL:	618.90	1200.00	-581.10

To be returned to applicant.

Town of New Windsor
555 Union Avenue
New Windsor, NY 12553
(845) 563-4611

RECEIPT
#1064-2004

10/20/2004

Walmart Stores Inc. P.B.# 03-32

Received $ 150.00 for Planning Board Fees, on 10/20/2004. Thank you for stopping by the Town Clerk's office.

As always, it is our pleasure to serve you.

Deborah Green
Town Clerk

PLANNING BOARD
TOWN OF NEW WINDSOR

AS OF: 10/20/2004 PAGE: 1

LISTING OF PLANNING BOARD **FEES**
ESCROW

FOR PROJECT NUMBER: 3-32
NAME: SUBDIVISION FOR WAL-MART EXPANSION PA2003-1187
APPLICANT: APD ENGINEERING (FOR WAL-MART STORES)

--DATE--	DESCRIPTION---------	TRANS	--AMT-CHG	-AMT-PAID	--BAL-DUE
10/15/2003	REC. CK. #7988	PAID		1200.00	
10/22/2003	P.B. ATTY. FEE	CHG	35.00		
10/22/2003	P.B. MINUTES	CHG	54.00		
03/24/2004	P.B. ATTY. FEE	CHG	35.00		
03/24/2004	P.B. MINUTES	CHG	38.50		
05/12/2004	P.B. ATTY. FEE	CHG	35.00		
05/12/2004	P.B. MINUTES	CHG	38.50		
10/06/2004	P.B. ENGINEER FEE	CHG	382.90		
10/20/2004	RET. TO APPLICANT	CHG	581.10		
		TOTAL:	1200.00	1200.00	0.00

10/20/04
L.R.

PLANNING BOARD
TOWN OF NEW WINDSOR

AS OF: 10/20/2004 PAGE:

LISTING OF PLANNING BOARD **FEES**
APPROVAL

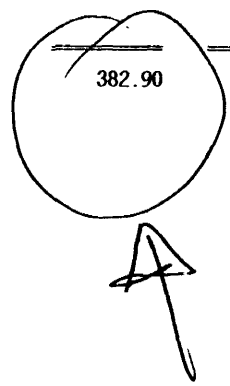
FOR PROJECT NUMBER: 3-32
NAME: SUBDIVISION FOR WAL-MART EXPANSION PA2003-1187
APPLICANT: APD ENGINEERING (FOR WAL-MART STORES)

--DATE--	DESCRIPTION---------	TRANS	--AMT-CHG	-AMT-PAID	--BAL-D
10/06/2004	APPROVAL FEE	CHG	150.00		
10/19/2004	REC. CK. #9196544	PAID		150.00	
		TOTAL:	150.00	150.00	0.

CHRONOLOGICAL JOB STATUS REPORT

JOB: 87-56
NEW WINDSOR PLANNING BOARD (Chargeable to Applicant) CLIENT: NEWWIN - TOWN OF NEW WINDSOR
TASK: 3- 32
FOR WORK DONE PRIOR TO: 10/06/2004

TASK-NO	REC	--DATE--	TRAN	EMPL	ACT	DESCRIPTION---------	RATE	HRS.	DOLLARS TIME	EXP.	BILLED	BALANCE
3-32	226110	10/21/03	TIME	MJE	MC	WALMART L/L	95.00	0.80	76.00			
									76.00			
3-32	231379	12/30/03				BILL 03-1595					-76.00	
											-76.00	
3-32	242984	03/24/04	TIME	MJE	MC	WALMART L/L	99.00	0.60	59.40			
									59.40			
3-32	246406	04/28/04				BILL 04-459					-59.40	
											-59.40	
3-32	248463	05/11/04	TIME	MJE	MC	WALMART L/L	99.00	0.50	49.50			
3-32	249947	05/12/04	TIME	MJE	MM	WALMART LL COND APPL	99.00	0.10	9.90			
									59.40			
3-32	250533	05/24/04				BILL 04-543					-49.50	
											-49.50	
3-32	266732	09/15/04	TIME	MJE	MC	WALMART L/L STATUS	99.00	0.40	39.60			
3-32	267791	09/17/04	TIME	BMM	MR	ESTIMATE REVIEW	99.00	1.50	148.50			
						TASK TOTAL			382.90	0.00	-184.90	198.00
						GRAND TOTAL			382.90	0.00	-184.90	198.00



McGOEY, HAUSER and EDSALL
CONSULTING ENGINEERS P.C.

RICHARD D. McGOEY, P.E. (NY & PA)
WILLIAM J. HAUSER, P.E. (NY & NJ)
MARK J. EDSALL, P.E. (NY, NJ & PA)
JAMES M. FARR, P.E. (NY & PA)

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(845) 567-3100
fax: (845) 567-3232
e-mail: mheny@mhepc.com

Writer's e-mail address:
mje@mhepc.com

TOWN OF NEW WINDSOR
PLANNING BOARD
REVIEW COMMENTS

PROJECT NAME:	WALMART SITE PLAN (BUILDING ADDITION & RELATED SITE IMPROVEMENTS)
PROJECT LOCATION:	OFF NYS RT. 300 (UNION AVENUE) SECTION 4 – BLOCK 1 – LOT 1.1 (reconfigured)
PROJECT NUMBER:	03-33
DATE:	12 MAY 2004
DESCRIPTION:	THE APPLICATION INVOLVES AN ADDITION TO AN EXISTING BUILDING (IN THE TOWN OF NEWBURGH), WITH THE ADDITION CROSSING INTO THE TOWN OF NEW WINDSOR. THE APPLICATION ALSO INCLUDES RELATED SITE IMPROVEMENTS ON THE NEW WINDSOR SIDE OF THE TOWN LINE. THE APPLICATION WAS PREVIOUSLY REVIEWED AT THE 22 OCTOBER 2003 AND 24 MARCH 2004 PLANNING BOARD MEETINGS. THE APPLICATION IS BEFORE THE BOARD FOR A PUBLIC HEARING AT THIS MEETING.

1. The Walmart proposal involves site plan changes in both the Towns of New Windsor and Newburgh. The Town of Newburgh Planning Board is also reviewing a site plan application, and has been acting as the Lead Agency under SEQRA for this "action". The Newburgh Board previously adopted a Negative Declaration and this board previously adopted and accepted the Negative Declaration a their 24 March 2004 meeting.

2. It would be beneficial that the applicant update the Planning Board on any revisions made to the plans and the progress made with the Newburgh board, as well as outside approval agencies.

3. At this time it is my understanding that the only pending items are:

   - Verification that all sewer and water services are available from the Town of Newburgh.
   - Verification that the applicant has received approval from the New Windsor Town Highway Superintendent for the proposed improvements in Liner Road.

4. In the event that the Planning Board closes the Public Hearing and is interested in considering a conditional approval, I have worked with the applicant's representatives in the preparation of a draft resolution of approval for the applications pending before the board. Such resolution is attached hereto.

Respectfully Submitted,

Mark J. Edsall, P.E., P.P.
Planning Board Engineer

MJE/st
NW03-32-12May04.doc

McGOEY, HAUSER and EDSALL
CONSULTING ENGINEERS P.C.

RICHARD D. McGOEY, P.E. (NY & PA)
WILLIAM J. HAUSER, P.E. (NY & NJ)
MARK J. EDSALL, P.E. (NY, NJ & PA)
JAMES M. FARR, P.E. (NY & PA)

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Writer's e-mail address:
mje@mhepc.com

TOWN OF NEW WINDSOR
PLANNING BOARD
REVIEW COMMENTS

PROJECT NAME:	WALMART LOT LINE CHANGES
PROJECT LOCATION:	OFF NYS RT. 300 (UNION AVENUE) SECTION 4 – BLOCK 1 – LOT 5.1, 5.2 & 1.1
PROJECT NUMBER:	03-32
DATE:	24 MARCH 2004
DESCRIPTION:	THE APPLICATION INVOLVES THE RE-ARRANGEMENT OF PROPERTY LINES BETWEEN THE INVOLVED LOTS. THE APPLICATION WAS PREVIOUSLY REVIEWED AT THE 22 OCTOBER 2003 PLANNING BOARD MEETING.

1. This is a companion application to the Walmart Site Plan (app. 03-33; lot 1.1) also currently before the Board. The application involves re-arrangement of lot lines for properties owned Walmart Stores Inc. Three lots currently exist, and three reconfigured lots are proposed.

2. We previously requested that the lot line change plan submitted provide a bulk table with existing and proposed values provided for each lot. The plan submitted has a bulk table, which is incomplete. The table must include listing for Street Frontage and Development Coverage (both n/a). Also, the table should include a "provided" value for each criteria, both "existing" and "proposed" for each of the reconfigured lots involved in the application.

3. The plan should include a note restriction with regard to direct access of proposed lots 5.1 and 5.2 (shown as outparcel #1 and future lease parcel) to NYS Rt. 300 (Union Ave.)., as was discussed previously.

4. I am not aware of a written report from the Highway Superintendent. I have spoken with him and he has noted concern with regard to the condition of Liner Road and its proposed use as an additional access to the site.

5. The Planning Board should determine if a Public Hearing will be necessary for this minor subdivision (in form of lot line change), or if same can be waived per Paragraph 4.B of the Subdivision Regulations.

Respectfully Submitted,

Mark J. Edsall, P.E., P.P.
Planning Board Engineer

MJE/st
NW03-32-24Mar04.doc

CME
CREIGHTON MANNING ENGINEERING, LLP

Partners
Charles W. Manning, P.E.
John M. Tozzi, P.E.
Edward V. Woods, P.E.
Donald G. Sovey, P.L.S.

Associates
Shelly A. Johnston, P.E., PTOE
Mark A. Sargent, P.E., PTOE
Jeffrey W. Pangburn, P.E.
Thomas R. Johnson, P.E., PTOE

3-2-04
MKRA
Copy for P/B file
Walmart

RECEIVED
MAR - 1 2004
TOWN OF NEWBURGH
PLANNING BOARD

JPE 31.04

March 1, 2004

Mr. John Ewasutyn
Planning Board Chairman
Town of Newburgh
308 Gardnertown Road
Newburgh, NY 12530

RE: Traffic Impact Study Review for Wal-Mart Expansion, NYS Route 300 (Union Avenue), Town of Newburgh, NY; CME Project No. 03-149
~~Town Project No. 2003-58~~

Dear Mr. Ewasutyn:

Creighton Manning Engineering is in receipt of the latest transmittal, dated February 23, 2004, containing updated site plans, visuals, and responses to various comments. With regards to traffic, the Board expressed concerns regarding the operations of the Wal-Mart access road at the entrance to the credit union. The applicant has done further study of these operations and has estimated the 95th-percentile vehicular queue lengths. The analysis indicates that the worst-case queuing conditions during the peak hours will be approximately 260 feet under the build with mitigation scenario. This is approximately one car length beyond the existing credit union driveway and comparable to existing worst-case conditions. This condition is expected to occur approxdmate 5 to 6 times per peak hour. With the provision of a second access to the credit union, patrons will have the ability to exit the credit union if the main entrance is blocked.

The applicant has also agreed to review the traffic conditions after the completion of the proposed project. If the Board requires the follow-up study, it is recommended that this follow-up study occur approximately one year after completion of the expansion project.

Based on the additional information provided, we have no further traffic comments. If you have any questions please do not hesitate to contact our office.

Respectfully submitted,
Creighton Manning Engineering, LLP

Kenneth Wersted, I.E.
Project Engineer

Cc: Ed Garling – Town Planner
Jim Osborne – Town Engineer
Michael Donnelly – PB Attorney
Glenn Boucher – NYSDOT
Pat Hines – MHE
Karen Arent – KALA
Akhtar Shareef – NYSDOT

F:\Projects\03-149\review\ltr03.doc

PB# 03.33

Town of New Windsor
555 Union Avenue
New Windsor, NY 12553
(845) 563-4611

RECEIPT
#396-2004

04/23/2004

Apd Engineering
3445 Winton Place
Suite 208
Rochester, NY 14623

Received $ 250.00 for Planning Board Fees, on 04/23/2004. Thank you for stopping by the Town Clerk's office.

As always, it is our pleasure to serve you.

Deborah Green
Town Clerk

PUBLIC HEARINGS:

WAL-MART SITE PLAN, SPECIAL PERMIT & LOT LINE CHANGE (03-32 & 03-33)

MR. PETRO: Proposed expansion of existing Wal-Mart store. Application involves rearrangement of the property lines between the involved lots. The application was previously reviewed at the 22 October, 2003, 24 March, 2004 planning board meetings. Application is before the board tonight for a public hearing. This is a companion application to the Wal-Mart site plan which is also currently before the board application, involves rearrangement of a couple lot lines for the properties owned by Wal-Mart stores Inc. There are no significant outstanding issues for this application. We previously requested that the lot line change plan has some minor changes to the bulk table, we also requested that the plan include a note restricting with regard to direct access to proposed lots 5.1, 5.2 shown on parcel number one. Mark has worked out a preparation of a resolution for approval that we can get into later but obviously this is a public hearing. I notice there's people here tonight for public hearings. The way this works is the board reviews it first, at some time during that presentation, we will listen to your comment, close the public hearing, open it up to the board again.

MR. EDSALL: Do you want to combine it? Since it was advertised as a single public hearing for the lot line change, special permit and site plan, why don't we just for the record indicate that you're addressing both applications, both the lot line change and the site plan which includes special permit in this public hearing.

MR. PETRO: Just so there's no confusion, this has nothing to do with number one, this is number one both of what Mark's talking about. Is there someone here to

represent this, come forward, state your name and what you're doing here.

MR. GARDNER: Derrick Gardner with APD Engineering.

MR. PETRO: I made this presentation, I don't want to go over the whole thing again, so what we'll do is did any board members have any comment at this time? I'd like to open it to the public to find out if there's anything from them. This is, you have already had a public hearing in the Town of Newburgh, correct?

MR. GARDNER: Yes.

MR. PETRO: Not for the lot line change in the Town of New Windsor.

MR. GARDNER: No.

MR. PETRO: But you've had it for the site plan which you're also doing?

MR. GARDNER: Yes.

MR. PETRO: How was the turnout?

MR. GARDNER: One person.

MR. PETRO: One person for an entire Wal-Mart project? Amazing.

MR. GARDNER: That was from Applebee's, just traffic concern, other than that, that was it.

MR. PETRO: Very interesting. Okay, at this time, I'm going to open it up to the public for comment. On the 21st day of April, 2004, 4 addressed envelopes containing the public notice was mailed out. If anyone is here to speak for or against, be recognized by the Chair, come forward, state your name and address and

your concern.

MR. EBERT: Jerry Ebert from The Sentinel. Sir, could you give us a timetable on the construction if everything proceeds as planned?

MR. GARDNER: Currently right now we're going for site plan approval with the Town of New Windsor. Once we get that, we will turn around and go for the Town of Newburgh and know that we will begin in this June, we have a planning board meeting with them, if that goes well, we do get conditional site plan approval with them, we do have some issues so hopefully in the next two to three month's we'll be able to send this project out to bid and then once it's out to bid, it takes a couple months for the contractor to get the costs bid together and stuff like that and from their average construction for an expansion like this is about a year.

MR. PETRO: All right, Chair sees there's nobody else. Entertain a motion to close the public hearing.

MR. ARGENIO: Motion to close the public hearing for Wal-Mart.

MR. LANDER: Second it.

MR. PETRO: Motion has been made and seconded that the New Windsor Planning Board close the public hearing for the Wal-Mart site plan special permit lot line change and site plan, correct, Mark?

MR. EDSALL: Yes.

MR. PETRO: Any further discussion from the board members? If not, roll call.

ROLL CALL

MR. LANDER AYE
MR. SCHLESINGER AYE
MR. KARNAVEZOS AYE
MR. ARGENIO AYE
MR. PETRO AYE

MR. PETRO: At this time, I will open it up to the board for any further comment. We have seen this quite a number of times, the lot line change in itself is not a major issue as is the special permit which I believe is for the gas station, right?

MR. GARDNER: Yes.

MR. PETRO: And again, the site plan was lead agency basically was by the Town of Newburgh, we're just reviewing it as a secondary interested party.

MR. GARDNER: Yes.

MR. PETRO: And I don't want to go over the same things that we've been going over for the last year. Do any of the members have anything different they want to add or anything that they have noticed or Mark, do you have any other comment you want to bring up at this time and if you don't, why don't you just go over your resolution that you prepared? You don't have to read the whole thing, just give us the highlights.

MR. EDSALL: This resolution deals with all three items, lot line change, site plan and the special permit that's part of the site plan. It acknowledges all the previous reviews and just for the record, SEQRA has been closed, lead agency, the Town of Newburgh Planning Board had declared a negative dec, this board has concurred on the record and at a previous meeting that's incorporated as an item in the resolution. If you look at resolution page 37, it notes that the lot line change would be approved conditional to two items, one, that the final plan be reviewed for compliance

with the requirements of the board as have been noted during the review and payment of all fees, page 4 lists a lengthy list of conditions for the approval of the site plan, it also lists special permit approval. I won't list all of them but I will note that one issue that has been of concern is the reconstruction of Liner Road. There has been discussion between the applicant, myself and Henry Kroll and the second bullet under number 3 on page four basically acknowledges that they need to reconstruct that section of road and the detail and scope has to be as acceptable to the highway superintendent and myself. We have already discussed the scope of what's intended but that means that Henry will have an opportunity to look at the final plan and write off on it. Also inasmuch as it's our understanding that Liner Road will be used as a construction access, we want to have the record clear that they are going to do the reconstruction after they beat the heck out of the road as part of the construction so they'd use the existing road and reconstruct it after they're done with all the earth work and primary earth moving and such heavy equipment. The rest are pretty procedural straightforward, I think you probably looked at them, it was part of the package you've had and it's my recommendation that you move forward on it. They have been cooperative and at this point, the Town of Newburgh Planning Board is waiting to hear that this board is satisfied before they move forward.

MR. PETRO: This is for final approval on the lot line change and the site plan and the special permit?

MR. EDSALL: Yes.

MR. ARGENIO: Separate motions?

MR. EDSALL: No, I think this, in this particular case given the fact that it is one action under SEQRA, and it's had one environmental review and you had one

public hearing and unless Andy thinks there's a problem, I think this resolution incorporates all three. It's clear we're doing three items.

MR. KRIEGER: I agree.

MR. PETRO: What we're going to do, gentlemen, is the subject-to or to's we're going to accept the resolution that Mark has written and that's before us and you have a copy of and the other items that Mark has mentioned that's the subject-to, it's in the minutes, Franny has put them there, we're not going to redo it, so motion for approval, we're going to second it, just do the drum roll and that's it, the subject-to's are already done.

MR. GARDNER: Yes, we worked on it.

MR. PETRO: The resolution as it's written and the other subject-to's, you got everything that Mark said? With that, I will entertain a motion for final approval for the Wal-Mart site plan special permit, lot line change and site plan on Route 300.

MR. ARGENIO: I'll make a motion for final approval for the same subject to the resolution in front of us.

MR. LANDER: Second it.

MR. PETRO: Motion has been made and seconded that the New Windsor Planning Board grant final approval to the Wal-Mart site plan special permit, lot line change and site plan on Route 300 with the subject-to that was just previously mentioned. Any further comment from any of the board members? If not, roll call.

ROLL CALL

MR. LANDER AYE
MR. SCHLESINGER AYE

MR. KARNAVEZOS	AYE
MR. ARGENIO	AYE
MR. PETRO	AYE

RESULTS OF P.B. MEETING OF: May 12, 2004

PROJECT: Wal-Mart L.L. Chg. P.B. # 03-32
03-33

LEAD AGENCY:

AUTHORIZE COORD. LETTER: Y____N____
TAKE LEAD AGENCY: Y____N____

M)___S)___VOTE: A___N____
CARRIED: Y_____N____

NEGATIVE DEC:

M)___S)___VOTE: A___N____
CARRIED: Y_____N____

PUBLIC HEARING: WAIVED:_____ CLOSED: ✓

M) A S) L VOTE: A 5 N 0 SCHEDULE P.H.: Y____N____

SEND TO O.C. PLANNING: Y____
SEND TO DEPT. OF TRANSPORTATION: Y____

REFER TO Z.B.A.: M)____S)____ VOTE: A____N_____

RETURN TO WORK SHOP: Y___N____

APPROVAL: - accept resolution as written & subject to items

M) A S) L VOTE: A 5 N 0 APPROVED: 5/12/04

NEED NEW PLANS: Y____N____

CONDITIONS – NOTES:

Henry to look at final plan for Lizer Rd.

WAL-MART LOT LINE CHANGE 03-32

MR. PETRO: Your name for the minutes? Tell us who you are?

MR. GARDNER: I'm Derrick Gardner with EPD Engineering and I'd like to bring to the attention of the board a lot line change that we would eventually request for approval however the plans that are sitting in front of you have been modified by request of Wal-Mart and myself and the plans in front of you if you notice there's a future lease parcel, that parcel does not meet the requirement of a 200 foot width parcel we were going to do that for tax reasons so that way that parcel can be defined.

MR. PETRO: Point to that one, which one?

GARDNER: This one right down here was going to be for taxes, it was a future lease parcel for tax purposes only it didn't meet your 200 feet width requirement.

MR. PETRO: We can't create the lot line change as it is.

MR. GARDNER: I'd have to go to the Zoning Board, I talked to Wal-Mart and said let's make that whole parcel part of the Wal-Mart parcel, let's just not even do it so now instead of three parcels it will only be two parcels, Wal-Mart parcel and the out parcel, just remove the lease line.

MR. ARGENIO: Out parcel number 1 and the Wal-Mart parcel.

MR. GARDNER: That's it so basically we're taking three lines making it two, three parcels making it two parcels.

MR. PETRO: Where is the newer lot line we're creating?

MR. GARDNER: The lot line we're creating now this is the plan I brought with me is what I project that the lot lines will be what we're creating is this parcel here will be for Wal-Mart, the out parcel which is here will be for whatever future sales.

MR. ARGENIO: Out parcel will increase in size?

MR. GARDNER: Out parcel number one is not changing, that's staying as a one acre parcel and that does meet your lot width.

MR. ARGENIO: So you're adding the future lease parcel to the large site?

MR. GARDNER: Yes, all those lines are becoming the Wal-Mart site.

MR. KARNAVEZOS: So this line right here's gone.

MR. GARDNER: Yeah, that line right there is gone that used to be when we get to the site plan for the Wal-Mart parcel, that's the edge of the roadway.

MR. EDSALL: Mark, what do you have to say about this?

MR. EDSALL: I spoke with Derrick earlier and that's when we agreed that the, what's shown on this plan is the leased parcel could not be created by this board and that's when he informed me in speaking with Wal-Mart they're just gong to add that back into the total Wal-Mart parcel and then they'll have that gas station facility become part of that site plan so they'll review that as part of the Wal-Mart site plan. The out parcel, the one acre parcel will still become its own individual lot and as was indicated they right now have three parcels they're going down to two so it's still a lot line change, it's not a subdivision.

MR. PETRO: Disapproved from the fire department, it's pretty long, we're not going to take any action tonight so we'll just give you a copy of it.

MR. BABCOCK: I just gave the applicant a copy, Mr. Chairman.

MR. PETRO: I would say I don't believe that in my opinion we need a public hearing for this, I would entertain a motion to waive the public hearing. We need to take lead agency first, Mark, we're not lead agency though are we?

MR. EDSALL: You're not lead agency. Both the lot line change and the site plan are being considered under the single action that Town of Newburgh is lead agency.

MR. GARDNER: They have the SEQRA process.

MR. EDSALL: And relative to SEQRA they have already reached a negative dec, it may be an appropriate time to discuss whether you believe this, whether or not you want to move forward on a negative dec to cover both applications which I addressed under my site plan comments, so if you want to discuss that.

MR. PETRO: I think a negative dec on that would not be a problem.

MR. EDSALL: Negative dec, again, was already adopted by the Town of Newburgh, this board has to concur or not concur with the findings of the Town of Newburgh. What I have done for you is included in my attachment to my site plan a copy of the Town of Newburgh's negative dec.

MR. PETRO: On the next application?

MR. EDSALL: Right, but the negative dec covers both, it's one of the rare cases where they're packaged.

MR. PETRO: Town of Newburgh has already moved to do the negative dec?

MR. GARDNER: They have already gave us a negative declaration on the property.

MR. PETRO: We can just accept them as they're written and move on from there.

MR. EDSALL: The only issue that I'm aware of outstanding notwithstanding some issues obviously to resolve with the fire inspector's office, the highway superintendent wants to make sure that the applicant intends to upgrade or reconstruct the affected area of Liner Road because he has concerns of the conditions over that short piece of Liner with the understanding that they're intending to resolve that issue, I don't believe there's any impact issues that have not been addressed.

MR. PETRO: So back to the negative dec part of it, that's why we can accept it the way it's written?

MR. EDSALL: Right, with an understanding that they will address the highway department's concern for Liner Road.

MR. PETRO: But what I still want to do first let's get back to the public hearing for the subdivision, the lot line change, does anybody have an objection to that or entertain a motion to waive the public hearing for the lot line change, just the lot line change?

MR. ARGENIO: Motion to waive.

MR. KARNAVEZOS: Second it.

MR. PETRO: Motion has been made and seconded that the New Windsor Planning Board waive the public hearing for

the Wal-Mart lot line change off New York State Route 300. Is there any further discussion from the board members? If not, roll call.

ROLL CALL

MR. SCHLESINGER	AYE
MR. KARNAVEZOS	AYE
MR. ARGENIO	AYE
MR. LANDER	AYE
MR. PETRO	AYE

MR. PETRO: I guess we'll take and accept the negative dec from the Town of Newburgh for each one in the form of a motion.

MR. KRIEGER: Yes.

MR. PETRO: We'll do, well, this one is the lot line change, we'll accept it for this and accept the one that's written for the site plan which we're going to do next. It's the same for both, correct, Mark?

MR. EDSALL: Yes. Just for the record so that it's understood by the board members it may be beneficial for the board members to know that absent from possibly discussing some of the potential environmental impacts at these meetings, the Town of Newburgh has been kind enough to coordinate with us on a regular basis and the chairman and I have been at a couple different meetings with them where we have passed on this board's concerns and have made sure that in their deliberation they have considered the issues.

MR. PETRO: I've been at one of the meetings myself.

MR. EDSALL: I've been on a pretty much regular basis coordinating.

MR. PETRO: Motion to accept the negative declaration

as written by the Town of Newburgh Planning Board.

MR. ARGENIO: So moved.

MR. LANDER: Second it.

MR. PETRO: Motion's been made and seconded that the New Windsor Planning Board accept the negative declaration which has been adopted by the Town of Newburgh Planning Board as lead agency for the Wal-Mart lot line change off New York State Route 300. Is there any further discussion? If not, roll call.

ROLL CALL

MR. SCHLESINGER	AYE
MR. KARNAVEZOS	AYE
MR. ARGENIO	AYE
MR. LANDER	AYE
MR. PETRO	AYE

MR. PETRO: Back to the actual application, I would suggest that I'd like to see, you clean it all up so we can see what we're looking at, you're telling me we're removing lines.

MR. GARDNER: There will be another plan.

MR. PETRO: Before we take final action, I'm here 13 years, I don't know what the hell I'm looking at. Its all spaghetti over there. Get it cleaned up so we know what we're doing. We have a couple small notes to take care of with Mark on the sheet that he just gave you, find out from the fire department what he's talking about.

MR. GARDNER: I didn't get the comments until just now so we'll make sure we get them addressed.

MR. PETRO: Myra's going to fax you the correct one

tomorrow, the one that's on your sheet is not correct.

LEGAL NOTICE

NOTICE IS HEREBY GIVEN that the PLANNING BOARD of the TOWN OF NEW WINDSOR, County of Orange, State of New York will hold a PUBLIC HEARING at Town Hall, 555 Union Avenue, New Windsor, New York on **MAY 12TH, 2004** at 7:30 P.M. on the approval of the proposed Site Plan Special Permit & Subdivision for **WAL-MART STORES, INC.** Located at **RT. 300** (Tax Map #Section **4**, Block **1**, Lot **1.1**) . Map of the proposed project is on file and may be inspected at the **Planning Board Office**, Town Hall, 555 Union Avenue, New Windsor, NY prior to the Public Hearing.

Date: APRIL 21, 2004

By Order of

TOWN OF NEW WINDSOR PLANNING BOARD

James R. Petro, Jr., Chairman

COUNTY OF ORANGE **DEPARTMENT OF PLANNING**

EDWARD A. DIANA
COUNTY EXECUTIVE

124 MAIN STREET
GOSHEN, NEW YORK 10924-2124
TEL: (845)291-2318 FAX: (845)291-2533
www.orangecountygov.com/planning

DAVID CHURCH, A.I.C.P.
COMMISSIONER

April 1, 2004

Mr. John Ewasutyn, Chairman
Town of Newburgh Planning Board
1496 Route 300
Newburgh, NY 12550

Re: Wal-Mart Expansion
Our File No. NBT 1-04M

Dear Mr. Ewasutyn:

We are in receipt of the site plan and SEQRA narrative for the project entitled Wal-Mart-Expansion and have reviewed both pursuant to Section 239, Paragraphs L and M of the General Municipal Law and the inter-municipal agreement with the County of Orange. The purpose of this review is to coordinate the proposed action between and among government agencies and neighboring municipalities by bringing pertinent inter-community and countywide planning, zoning and site plan considerations to the attention of the municipal agency having jurisdiction. The considerations by which proposed actions are reviewed by the Orange County Department of Planning (OCDP) include the following:

- consistency with official municipal and county development policies such as the Orange County Comprehensive Development Plan as well as the Town of Newburgh and Town of New Windsor Comprehensive Development Plans;
- compatibility of various land uses with one another;
- protection of community character including visual impact and aesthetics;
- impact of traffic on transportation facilities and contiguous land uses;
- impact on community facilities such as sewage treatment and storm water drainage facilities; and
- matters relating to public convenience and governmental efficiency in achieving and maintaining a satisfactory community environment.

In order for the OCDP to adequately review a proposed action with the considerations cited above, it is essential that the referring body send us a *full statement of the proposed action*. A *full statement of the proposed action* is defined in Section 239, paragraph M of the General Municipal Law as ...*"all materials required by and submitted to the referring body as an application on the proposed action, including a completed environmental assessment form and all other materials required by such referring body in order to make its determination of significance pursuant to the state environmental quality review act under Article 8 of the environmental conservation law and implementing regulations*. In this case, the full traffic and drainage studies for the intended expansion of Wal-Mart were omitted from the original application submitted. Such an omission delayed the review of the proposed action. While the OCDP received the traffic and drainage studies for the project on March 29th, 2004, the landscaping, lighting and architectural details mentioned in the Long Form EAF Supplement and SEQRA Negative Declaration (series of site plans and related drawings) are still missing from the application.

Based on the information that was submitted to the OCDP thus far, the following comments are offered for your consideration:

- The Long Form EAF Supplement mentions that the proposed expansion of Wal-Mart will enhance the store's architectural appearance. Yet no architectural, landscaping, signage, or lighting details have been submitted to the OCDP to substantiate such an assertion. If such details have not already submitted, such plans should be required to ensure that such improvements will, indeed, occur to enhance the aesthetic appearance of the store's façade and parking lot.

- The SEQRA Negative Declaration indicates that .35 acres of wetlands will be destroyed as a result of the expansion of the Wal-Mart. Whether the wetland is manmade or natural is irrelevant. All wetlands should be protected to the fullest extent possible regardless of how they were created. The wetland should not be filled of disturbed as a result of the proposed action in any manner. Wetlands are valuable natural resources, important in providing habitat for rare and endangered species, recharge to groundwater supplies, as well as scenic beauty. The filling of a US Army Corp of Engineers jurisdictional wetland is a regulated activity, requiring a permit before site plan approval is granted.

- Increasing a watershed's impervious surface has many consequences. The most significant are the increases in storm water runoff, flooding, streambed erosion as well as surface and groundwater pollution. Impervious surfaces also change the hydrology and ecology of a watershed by decreasing groundwater recharge and increasing water temperature. While the storm water detention basin for the project meets NYS storm water sizing criteria, it does not adequately address the need to treat storm water for pollutants and thermal loading. Stilling and settling basins should be required at the inlets and outlets of the detention basin to filter pollutants from the parking lot and other impervious surfaces and to help reduce the temperature of the storm water before it enters the nearby wetland and stream. A study should also be conducted to determine whether the all the required parking is really needed in order to reduce the impervious surface planned. Overflow parking areas for peak shopping times should be made of a permeable paving to increase groundwater infiltration and slow surface water sheet flow to culverts and drainage ways.

Overall, the proposed expansion of the existing Wal-Mart is consistent with the newly amended Orange County Comprehensive Development Plan: Strategies for Quality Communities by being a higher density commercial use planned for an already built suburban environment. However, changes to the project's storm water management and parking plans are warranted to reduce the environmental impact to the watershed. The aesthetic appearance of the store and the impact of signage and lighting on community character and neighboring land uses needs to be addressed. These recommendations are made to ensure that all the probable consequences associated with the expansion of the Wal-Mart are carefully considered and to improve the quality of project for all concerned. If there are any questions or concerns, please do not hesitate to contact us.

Sincerely,

David E. Church, AICP
Commissioner of Planning

CC: Mr. James Petro, Chairman
Town of New Windsor Planning Board

RESULTS OF P.B. MEETING OF: March 24, 2004

PROJECT: Wal-Mart L.L. Chg P.B. #

LEAD AGENCY: **NEGATIVE DEC:** → Accept for T. Newb

AUTHORIZE COORD. LETTER: Y____ N____ M) A S) L VOTE: A 5 N 0
TAKE LEAD AGENCY: Y____ N____ CARRIED: Y ✓ N____

M)___ S)____ VOTE: A____ N____
CARRIED: Y____ N____

PUBLIC HEARING: WAIVED: ✓ CLOSED:____

M) A S) L VOTE: A 5 N 0 SCHEDULE P.H.: Y____ N ✓

SEND TO O.C. PLANNING: Y____
SEND TO DEPT. OF TRANSPORTATION: Y____

REFER TO Z.B.A.: M)____ S)____ VOTE: A____ N____

RETURN TO WORK SHOP: Y___ N____

APPROVAL:

M)___ S)____ VOTE: A____ N____ APPROVED:____

NEED NEW PLANS: Y___ N____

CONDITIONS – NOTES:

Ltr. Fire Disapproval to Derek Stadter

SEQRA - Under Town of Newburgh.

For Site Plan + L.L. Chg -

Submit Current Plan

NEGATIVE DECLARATION
TOWN OF NEWBURGH PLANNING BOARD

WAL-MART EXPANSION SUPER-CENTER

Determination: Please take notice that, according to the provisions of 6NYCRR, Part 617.7, the Town of Newburgh Planning Board, as lead agency, having reviewed and considered an environmental assessment form and plans for the proposed uses, has determined that the actions as cited and described below will not have an adverse impact on the environment and the Planning Board has, therefore, adopted a resolution to this effect.

Lead Agency: Town of Newburgh Planning Board

Contact Person: John P. Ewasutyn, Chairman
308 Gardnertown Road
Newburgh, New York 12550
(845) 564-7804

SEQRA: Type 1, coordinated, Town of Newburgh Planning Board became lead agency as of November 16, 2003

Location: Route 300 at the New Windsor border at Liner Road. Both the property and buildings lie in both towns

Tax Map Parcel: Section 95, Block 5, Lot 39.2 in the Town of Newburgh and Section 4, Block 1, Lots 1.1, 5.1 and 5.2 in the Town of New Windsor

Towns of Newburgh and New Windsor, County of Orange

Action: Subdivision and/or Lot line changes and lot reconfiguration and site plan approval

Project Description, Background and Reasons Supporting the Negative Declaration:
Wal-Mart is proposing an 82,993 square foot expansion of the existing 125,715 square foot Wal-Mart store located in Newburgh. The expansion will extend into the Town of New Windsor and includes a grocery facility which makes the building a super center. In addition to the site plan amendments in the Towns of Newburgh and New Windsor the development in New Windsor includes demolition of two storage buildings totaling 27,000 square feet, subdivision and lot line changes and consolidation, creation of two commercial sites and a modification to a credit union bank site.

This will allow two separate one acre parcels to be redeveloped with commercial uses with access to Wal-Mart's internal road and the new access road to Route 300 in New Windsor via Liner Road. This document was prepared based on the two commercial lots housing a gasoline filling station and convenience store and a chain, full service restaurant.

Additional changes proposed in this plan are architectural remodeling of the store's exterior, a revised parking and landscape plan, modification of on-site utilities, new road and stores and exterior seasonal sale areas. The traffic analysis evaluates the impacts of two new stores, but no such stores are designed or proposed at this time. Water and sewer for Wal-Mart will be supplied, in the future, from the Town of Newburgh and from on-site wells, if necessary, and service to the out and lease parcels will be supplied from the Town of New Windsor at a future date.

Application History:
Upon receipt of the application for the Wal-Mart expansion the Town of Newburgh and New Windsor Planning Boards coordinated SEQRA review and it was determined that the Town of Newburgh Planning Board would become lead agency for the review of all SEQRA issues insofar as this application is concerned in both towns. All involved agencies will also make SEQRA determinations prior to their decisions, but this document may be referenced.

Representatives of Wal-Mart approached the Town of Newburgh Planning Board and Town of New Windsor Planning Board as early as August 14, 2003. Wal-Mart's Project Engineers are APD Engineering of Rochester, New York. Based upon input and comments received at these meetings, Wal-Mart made a formal Site Plan Application to the Town of Newburgh on October 1, 2003. The Site Plan Application materials included:

- Site Plan Application Form;
- A series of Site Plans and related drawings;
- Long Form Environmental Assessment Form ("SEQRA EAF");
- Storm Drainage Report; and
- Traffic Study.

The Site Plan Application and SEQRA EAF materials were the subjects at a regularly scheduled Planning Board meeting for the Town of Newburgh on October 16, 2003. At that time, a presentation was made by Wal-Mart representatives and oral and written comments from the Planning Board and Town's consultants were received.

At this meeting, the Town of Newburgh Planning Board declared its intent to act as SEQRA Lead Agency. Subsequently, letters were sent to all involved agencies requesting their concurrence that the Town of Newburgh Planning Board act as Lead Agency. No other involved agency objected, and on January 29, 2004, the Town of Newburgh Planning Board confirmed that it would act as SEQRA Lead Agency.

Wal-Mart made a formal Site Plan Application to the Town of New Windsor on October 7, 1993. The Site Plan Application materials included:

- Site Plan Application Forms;
- A series of Site Plans and related drawings;
- SEQRA EAF;
- Storm Drainage Report; and
- Traffic Study.

The Site Plan Application and SEQRA EAF materials were the subjects at a regularly scheduled Planning Board meeting for the Town of New Windsor on October 22, 2003. At that time, a presentation was made by Wal-Mart representatives and oral comments from the Town's consultants were received.

At this meeting, the Town of New Windsor declared its intention to allow the Town of Newburgh to act as SEQRA Lead Agency.

[On October 21, 2003, the Applicant amended the site plan application submitted to the Town of New Windsor Planning Board and requested a lot line change. The Town of New Windsor has yet to reach a determination on this request, but it believes the changes constitute a subdivision which is addressed in this document]

On November 12, 2003, the Town of Newburgh had a work session to discuss the Project and comments received from its consultants.

The Site Plan Application and SEQRA EAF materials were again the subjects of a regularly scheduled Planning Board meeting for the Town of Newburgh on January 29, 2004. At that time, a presentation was made by Wal-Mart representatives and oral comments from the Planning Board and the Town's consultants were received.

At this meeting, the Town of Newburgh Planning Board declared itself Lead Agency for the proposed Wal-Mart Super-Center.

Review Process

During the Board's review process, issues of potential concern were identified, analyzed and considered and such concerns were fully addressed by Wal-Mart.

The Lead Agency has carefully considered each of the issues of potential environmental concern. A complete discussion of each area of potential environmental concern; the analysis of each area; and why the Board, as Lead Agency, has concluded the Project, as proposed, will not have a significant effect on the environment is set forth below. The areas of potential environmental concern are addressed in the order in which they appear in Part 2 of the EAF. This discussion is supplemental to Parts 2 and 3 of the EAF completed by the Board.

1. Physical Changes to the Project Site. The Site will be changed by grading (removing slopes) to meet the recommendations of Empire Geo Services, Inc. (geotechnical engineers). Between 120,000-130,000 cubic yards of material will be removed from the site. At this time it is unknown where that material will be taken to be disposed. If it is disposed at sites in Newburgh or New Windsor a formal application must be made and approved prior to removal of soil from its present location. Prior to removal of soil from the site to any location a pre-construction meeting shall be held with Town of Newburgh and New Windsor Police agencies, Town Engineers and DOT to establish policies for trucking volumes and hours of operation for soil removal. Onsite soils can provide sufficient bearing capacity to support the proposed construction. Of the approximately 9.90 acres of wetlands on the Site, only approximately 0.35 acres will be filled. See the discussion under #4 below for details. Removal of all structures in New Windsor will be completed without impacting existing Wal-Mart traffic on site and all asbestos

and other potentially toxic materials, if they exist, shall be disposed of in sites approved by the DEC and in a manner approved by the DEC.

2. Unique or Unusual Land Forms. There are none on the Site.
3. Impacts on Protected Water lands. There are no water bodies in the Site protected under Articles 15, 24 or 25 of the Environmental Conservation Law.
4. Impacts or Other Bodies of Water. Approximately 0.35 acres of the approximately 1.02 acres of wetlands W2 (identified in the Wetland Delineation Report prepared by NEA dated October 29, 2003) will be filled as part of the expansion. This wetland area was inadvertently created as a result of quarry operations and building the original Wal-Mart. The Wetland Delineation Report characterizes W2 as "a hydrologically isolated depression, and fed primarily by direct precipitation and runoff from adjacent uplands" at page 15 of the report. Based upon a Supreme Court ruling issued in 2001, non-navigable, isolated, and intrastate wetlands such as W2 are not within the jurisdiction of the United States Army Corp of Engineers ("USCOE").

   The Planning Board requires a Jurisdictional Determination from the Corps on this issue and such documentation has been requested by APD Engineering.

   Based upon the above, impacts from filling a portion of this incidentally man-made wetland is quite small and insignificant. No other wetlands on the property will be impacted.
5. Surface or Groundwater Quality or Quantity. The existing sanitary sewer main for the existing Wal-Mart will be modified to serve the entire store .Due to current limitations on the Town of Newburgh the water and sewer generation will be limited to 6,235 gallons per day. Sewer flows will be handled up to this gallonage by the existing sewage treatment plant. A condition of the approval of the site plan will be the approval of the Town of Newburgh Town Board that the sewer flows can be restricted to what had been approved in 1993 for the original site plan and that sewer flows from New Windsor will be acceptable to the City of Newburgh. The SEQRA approvals for the existing Wal-Mart envisioned an expansion that allowed 6,235 gallons of sewage to be discharged to the Town of Newburgh's sewage to be discharged to the Town of Newburgh's sewage facilities. As proposed by the Applicant, the estimated amount of sewage to be discharged as part of the expansion project does not exceed the previously approved amount of 6,235 gallons. The project as proposed will use an onsite well for water required by the garden center and on site plantings. The construction of the Project will require a notice of intent filing under the New York Department of Environmental Conservation General Permit for storm water discharge relating to construction activities. The applicant has indicated that it will comply with all applicable terms of such General Permit. The facility will require an average of 6,700 gallons of water per day. The Town of Newburgh presently supplies water to the site. The Town's water supply system has ample capacity to provide the additional water required by the expansion, but is limited by the sewer moratorium on additional flows.
6. Drainage. The Project is designed to involve no adverse change to existing drainage patterns. The existing drainage for the Site flows from the south side of the property through an approved storm water system within the pavement area to an existing detention and water quality basin on the north side of the Wal-Mart building. From the detention basin, the storm water runs to the existing wetland. The existing wetland drainage then passes under Orr

Avenue. The existing Site does not meet the new New York State Department of Environmental Conservation ("NYSDEC") storm water management design requirements and does not meet the size requirements for the proposed expansion. The proposed Project will incorporate the current NYSDEC storm water management design manual and the proposed storm water basin has been designed to provide the required detention. Additional storm water impacts have been mitigated by increasing the storage volume in the existing detention and water quality basin to maintain the existing outlet flows. This document covers stormwater management and drainage for Wal-Mart and the lease and out parcels.

7. Impact on Threatened or Endangered Species. No endangered or threatened species use the Site. A majority of the Site has been used for commercial purposes, a Wal-Mart retail center, since 1993.
8. Impact on Other Species. The proposed action will disturb the Site. However, a majority of the Site has been used for commercial purposes for some time and has not provided substantial wildlife habitat.
9. Agricultural Land Resources. The Site is not located in an agricultural district. The Land has been used for commercial purposes, a Wal-Mart retail center, since 1993 and will have no impact on agricultural resources.
10. Aesthetics. The Site is presently occupied by the existing Wal-Mart. After the proposed expansion, the existing Wal-Mart façade will be upgraded. The applicant has also committed to extensive onsite landscaping which has been reviewed by the town's landscape consultant. The applicant has agreed that all conditions contained in the Karen Arent Landscape Architect letter dated March 3rd shall be complied with and the Planning Board must also grant approval to architectural plans.
11. Historic and Archeological Resources. Wal-Mart retained Northern Ecological Associates, Inc. ("NEA") to conduct a Phase I A cultural resource investigation and report of the Project. NEA prepared the report in accordance with the Guidelines and Requirements of the New York State Office of Parks, Recreation and Historic Preservation ("NYSOPRHP"). Such office reviewed the report, and in a letter dated November 25, 2003, concluded that the Project will have no impact upon cultural resources nor is the Site eligible for inclusion in the State and National registers of Historic Places.
12. Open Space and Recreation. The Project Site is presently occupied by a Wal-Mart retail store and is clearly appropriate for commercial development. Further development of the project Site as intended would not impact existing or proposed recreational facilities of the community.
13. Critical Environmental Areas. There are no NYSDEC or local agency designated critical environmental areas at or adjacent to the project Site in either town.
14. Transportation. SRF, Wal-Mart's Traffic Engineers, prepared a detailed traffic impact study dated September, 2003, in accordance with NYSDOT Standards and Guidelines. The traffic study was provided to NYSDOT for its review and comments. Wal-Mart has yet to receive comments from NYSDOT. Wal-Mart has proposed the following mitigation measures:
    - Modification to the existing eastbound right turn lane at the Route 300/Wal-Mart Drive intersection to allow shared left/right turn movements;

- Modification to the existing three-phase signal operation at the Route 300/Wal-Mart Drive intersection to eliminate the eastbound right lane overlap; and
- Modification to the span wire assembly (sign and signal head modification) as appropriate to accommodate an eastbound area left turn movement at the Route 300/Wal-Mart Drive intersection.
Based on the above mitigation measures, the existing levels of service should be maintained or improved.
- Follow-up study one year from opening to confirm traffic flows are functioning as proposed. The specifications of items to be studied shall be prepared by the town's traffic consultant at the request of the Planning Board along with a cost estimate which will be paid by the applicant prior to approval.
- No further traffic access to Route 300 from any parcel.

15. Impact on Energy. The proposed Project will result in increased energy consumption. The electric systems in the Towns of Newburgh and New Windsor can serve the increased requirements of the Project.

16. Noise and Odor. There will be additional noise created during the construction and operation of the Project. Construction noise impacts will be temporary and will be mitigated by the size of the Site, distance of construction activities from nearby residences, and landscaping proposed as part of the Site Plan, and proper maintenance and repair of construction. It is not expected that additional noise will be created as a result of the completed Project.

The completed Project is not expected to create strong or unpleasant odors.

17. Public Health. The Project does not meet any of the thresholds identified in Part 2 of the EAF. All storage of petroleum products shall be indoors or with secondary containment provisions.

The building will be designed in accordance with the National Fire Protection Association Codes.

18. Growth and Character of Community. The Project does not conflict with any officially adopted plans or goals, and, in fact, is consistent with the Land Use Plan and Zoning Laws for the Town of Newburgh and Town of New Windsor for continued use of the property as commercial except in regard to parking space areas.

A subdivision or lot line change must be filed with and approved by the Town of New Windsor prior to approval or as a condition of plan approval.

Parking spaces either have to be increased in size and codes complied with or waivers or an area variance must be issued by the New Windsor Zoning Board of Appeals prior to approval of plans.

The Project is not expected to create a substantial increase in population of the area or substantial increase in municipal budgets. It is anticipated that the Project will create 260 additional permanent jobs and 150 jobs during construction. Almost all the jobs will be filled from existing labor pools and therefore no increase in population is expected. The Project will generate additional property and/or sales tax revenue to the Town of Newburgh and Town of New Windsor, their school district and Orange County.

Additional demand for emergency services, fire and life support service by the new Wal-Mart Super-Center should be negligible and not significantly different than the current level of service demand generated by the existing Wal-Mart. Emergency services from Newburgh will service the interior of the building and the respective town services will address emergency problems on the outside of all buildings within their service areas.

19. Public Controversy. There do not appear to be any organized groups opposed to the project.
20. This document addresses traffic, cultural, habitat, agricultural and other general environmental concerns for the lease and out parcels, but does not address zoning, water, sewer or drainage issues except in a generic fashion for a gasoline service station and restaurant. If future uses in New Windsor are in compliance with this document, in the opinion of the Town of New Windsor Planning Board, this document may be referenced for future SEQRA approvals.

Conclusion

The Board, for the reasons set forth above, therefore determines that the proposed Project, with the mitigation measures proposed by the applicant, will not have a significant effect on the environment and therefore a Negative Declaration has been prepared, filed and distributed as required by the SEQRA regulations.

Date of Action: March 4, 2004

Date of Mailing: March 8, 2004

Involved Agencies:

Wayne Booth, Supervisor
Town of Newburgh Town Board
1496 Route 300
Newburgh, New York 12550

John P. Ewasutyn, Chairman
Town of Newburgh Planning Board
308 Gardnertown Road
Newburgh, New York 12550

Orange County Health Department
124 Main Street
Goshen, New York 10924

New York State Department of Environmental Conservation
21 South Putt Corners Road
New Paltz, New York 12561

New York State Department of Transportation
4 Burnett Blvd.
Poughkeepsie, New York 12603

New York State Department of Transportation
112 Dickson Street
Newburgh, New York 12550
Att: Richard Burns

George Meyers, Supervisor
Town of New Windsor Town Board
555 Union Avenue
New Windsor, New York 12553

James Petro, Chairman
Town of New Windsor Planning Board
555 Union Avenue
New Windsor, New York 12553

Interested Agencies/Parties:
New York State Department of Environmental Conservation, ENB
625 Broadway, 4th Floor
Albany, New York 12233-1750

APD Engineering
3445 Winton Place-Suite 208
Rochester, New York 14623

Michael Donnelly, Esquire
PO Box 610
Goshen, New York 10924

James Osborne, P.E.
Town of Newburgh
308 Gardnertown Road
Newburgh, New York 12550

Mark Edsall, P.E.
McGoey, Hauser & Edsall
33 Airport Drive, Suite 202
New Windsor, New York 12553

Pat Hines
McGoey, Hauser & Edsall
33 Airport Drive, Suite 202
New Windsor, New York 12553

Orange County Planning Department
124 Main Street
Goshen, New York 10924

City of Newburgh
83 Broadway
Newburgh, New York 12550

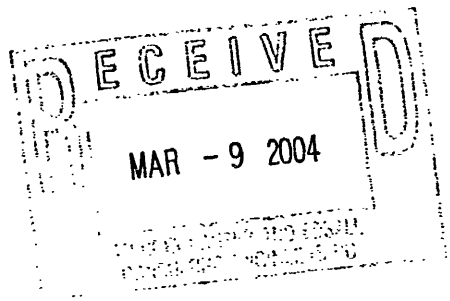
Orange Lake Fire District
408 South Plank Road
Newburgh, New York 12550

Vails Gate Fire District
272 Blooming Grove Turnpike
New Windsor, New York 12553

Kelly A. Pronti, Esquire
Harter, Secrest and Emery, LLP
1600 Bausch and Lomb Place
Rochester, New York 14604-2711

GARLING ASSOCIATES

March 8, 2004



David Church, Commissioner
Orange County Planning Department
124 Main Street
Goshen, New York 10924

RE: 239 l, m and n referral for Wal-Mart Expansion

Dear David:

Enclosed is SEQRA material and maps for your review under 239, l, m and n of the General Municipal Law on behalf of the planning boards of the Towns of New Windsor and Newburgh. In any correspondence we request responses be sent to both planning boards.

James P. Ewasutyn, Chairman
Town of Newburgh Pl. Bd
308 Gardnertown Road
Newburgh, New York 12550

James Petro, Chairman
Town of New Windsor Pl. Bd.
555 Union Avenue
New Windsor, New York 12553

The review process for these projects began last August and the two board chairmen met to discuss a joint review. At that time the 82,000 square foot addition was considered an Unlisted Action under SEQRA and it was agreed the Town of Newburgh Planning Board would be lead agency. Lead agency notification was distributed in October and the Town of Newburgh Planning Board became lead agency on November 16, 2003. Reviews and meetings were held jointly between board chairmen and consultants and a variety of plan changes were made over the period of the last six months.

Subsequently, during the review it was determined that this was a Type 1 Action rather than Unlisted as the addition was more than 50 percent of the 100,000 square foot threshold found in SEQRA 617.4. We are therefore notifying you at this time and requesting your review and comments.

217 Main Street • Goshen, New York 10924 • (845) 294-5835 • FAX (845) 294-5754 • 1-888-291-5835
E-mail: garling@frontiernet.net • lesliedotson@frontiernet.net

Both boards will be holding public hearings at a future date to be determined on the site plans. New Windsor will also be approving a subdivision, lot line change or reconfiguration which, under their regulations may not be subject to a hearing.

At the March 4th meeting of the Town of Newburgh Planning Board the board issued a Negative Declaration which is enclosed for your review along with other material. Should you have any questions please call me at 294-5835 or Michael Donnelly at 294-9447.

Sincerely,

Edwin J. Garling

Edwin J. Garling, AICP
EJG:mm
enclosures
cc: James Petro, Chairman Town of New Windsor Planning Board
John P. Ewasutyn, Chairman Town of Newburgh Planning Board
Michael Donnelly, Esquire
Pat Hines, P.E. McGoey, Hauser & Edsall
Mark Edsall, P.E. McGoey, Hauser & Edsall

WAL-MART

MR. SCHLESINGER: What happened with the Wal-Mart?

MR. PETRO: Town of Newburgh is taking lead agency as far as the SEQRA process and they're also going to do most of the lead agency for the entire site and the project, Mark and I both--

MR. EDSALL: Jim and I went to a meeting, we were significantly outnumbered.

MR. SCHLESINGER: They keep you totally abreast of what's going on?

MR. EDSALL: Yeah, we're doing a lot of E-mails, a lot of coordination and everything that's occurring they're sending copies.

MR. PETRO: They had contacted Mark last week to see if we wanted to be involved with the architectural review of the building and Mark brought up a good point, they have a basic design, not changing or varying from it, so we both decided that we didn't need to be because they do have, they being the Town of Newburgh do have an architectural review board so sometimes I think redundancy would be useless.

MR. ARGENIO: And non-productive.

MR. PETRO: What are we going to say, we don't like that block?

MR. SCHLESINGER: Well, the thing that we're concerned about is the traffic flow.

MR. PETRO: They're got a pretty good handle on it, it's very, believe me, that was number one of the discussion and it's definitely being handled.

MR. EDSALL: As soon as the traffic study is done we'll be getting copies here.

MR. PETRO: We're going to look at it.

MR. EDSALL: There's a lot more to look at.

MR. PETRO: Motion to adjourn?

MR. LANDER: So moved.

MR. ARGENIO: Second it.

ROLL CALL

MR. LANDER	AYE
MR. MASON	AYE
MR. KARNAVEZOS	AYE
MR. ARGENIO	AYE
MR. PETRO	AYE

Respectfully Submitted By:

Frances Roth
Stenographer

1/6/04

WAL-MART STORES SUBDIVISION (03-32)

Mr. Derek Gardner and Kelly A. Pronti, Esq. Appeared before the board for this proposal.

MR. EDSALL: I believe it's a lot line change cause when I look at what I understand from looking at the survey it looks as if there's three lots there now and looking at the tax maps looks like there might even be 4 lots and they're ending having 3 so--

MR. GARDNER: Which one would be the fourth one?

MR. EDSALL: There's two lots.

MS. PRONTI: You're talking about the existing lots.

MR. EDSALL: I count 3 on your plan and 4 on the tax maps. The proposed plan results in three lots, so no matter how you look at it, they're not creating any new lots, if anything, we're going from 3 to 3, which is a lot line or if we're going from 4 to 3, it's a lot line change, so I don't think we need call it a subdivision after tonight unless I'm interpreting the plan wrong, I think it's a lot line change.

MR. PETRO: You've got me very confused so show me on the map so I know what we're doing. Do you have anything up there that you can show us the subdivision that we have in front of us?

MR. GARDNER: What there is is a Town line right here, okay.

MR. PETRO: What is it again?

MR. GARDNER: Town line, it's one parcel, it's 36 acres, okay, what we're proposing to do is we have future leased lot and we want to do an out parcel right here but it's part of these two parcels, we're

acquiring the Arnoff property, which is 6 acres, so when we require that, that's like changing the lot line there.

MR. PETRO: You're taking that building down obviously?

MR. GARDNER: Yes, taking the whole thing down.

MR. PETRO: This is forward of the storage, you're not touching the storage that was just put up?

MR. GARDNER: No, that's these buildings right here are all the storage buildings. The fourth parcel I didn't understand.

MS. PRONTI: There's 4 existing parcels.

MR. GARDNER: Four existing tax map parcels so we'd be making three parcels.

MR. PETRO: You're going to create.

MR. GARDNER: Well, the third parcel is the Wal-Mart, this would be a parcel and then that would be a parcel, so this would have its own tax ID number, this would be the out parcel that we'd sell off and the Wal-Mart would be a parcel, that's where we're getting three parcels from.

MR. PETRO: It's all one parcel now, forget the tax map but right now, subdivision shows one parcel.

MR. GARDNER: Subdivision, it's two parcels because we're buying Arnoff's property.

MR. PETRO: So two parcels.

MR. GARDNER: So we have Wal-Mart parcel and Arnoff's property, unfortunately, tax map shows a couple lot lines or other information due to tax reasons but

basically right now there's two parcels.

MR. PETRO: Is the Arnoff parcel going to remain exactly the same or is that going to--

MR. GARDNER: No, remove those properties lines altogether so--

MR. PETRO: Create a new lot in the front?

MR. GARDNER: Yeah.

MR. PETRO: Want to sell off or whatever you want to do where the bank is?

MR. GARDNER: Right next to the bank.

MR. PETRO: You're going to have the bank on the parcel plus additional land?

MR. GARDNER: I think that's one thing that's coming into the bank is their own parcel, actually, I think that's what the fourth parcel is.

MR. BABCOCK: No, the bank is definitely on its own parcel.

MR. EDSALL: Arnoff is two lots, start off with that, Arnoff is not one, it's two lots, so you might be acquiring two lots. Wal-Mart, you have it as being one large parcel, Newburgh and New Windsor, but on the New Windsor side, you show it as one parcel. The tax maps show it as two parcels. So we see it from the tax records, unless there's a new version this year that I'm not aware of that shows four total lots involved in this application on the New Windsor side, what you're telling me you want to make Wal-Mart side one lot, you want to take Arnoff, take them into your property?

MR. GARDNER: Yes, we'll be buying both parcels.

MR. EDSALL: But you don't want to create a separate lot, you have it shown as out parcel 1?

MR. GARDNER: That's going to be its own parcel.

MR. EDSALL: You have to explain to me what you want, you want to have a separate lot you can sell?

MR. GARDNER: Yes, our parcel one is going to be one that we'll sell.

MR. EDSALL: What's the leased parcel?

MR. GARDNER: Going to get its own tax ID number but going to be owned by Wal-Mart.

MR. EDSALL: So that's a separate lot, we don't deal with lease lines, bottom line you want two lots and Wal-Mart--

MR. PETRO: Mark, hold it up a second, why are you before the planning board tonight? Sounds like we're doing workshop work.

MR. EDSALL: No, it's--

MR. PETRO: I don't have any idea, that's not a subdivision plan or a lot line plan.

MR. EDSALL: They've got two things.

MR. PETRO: Was that plan--

MR. GARDNER: This is the expansion, this is the site plan.

MR. PETRO: Let's take that down. Show me a plan of the parcels and what we're doing now. If I'm confused, I think everybody else has to be somewhat, I don't

understand.

MR. GARDNER: I didn't understand the subdivision parcel but it's part of the ordinance that a subdivision has to be created before the site plan can proceed.

MR. EDSALL: I'll post this but pink is what exists, orange is what they're proposing.

MR. ARGENIO: Yellow's Town of Newburgh/Town of New Windsor line.

MR. EDSALL: You've got two lots here which are going to be two lots re-configured.

MR. PETRO: You're going to want this as a new lot, this is a new lot and then the remainder's a lot?

MR. EDSALL: Yes, starting with two, just making these two smaller and re-configured and this whole piece remains as is.

MR. GARDNER: You see there was a second parcel.

MR. EDSALL: There's another lot line shown but it may have been mentioned and we're just not aware of it, either either way you're--

MR. GARDNER: That's why I didn't understand but I guess we can look at the tax map.

MR. ARGENIO: We're going to send you guys the bill for his services for tonight.

MR. EDSALL: It took me a while to figure it out, so I had to get the highlighters out.

MR. PETRO: Put it up there so the rest of the members can see what I see, that's little bit more

understandable.

MR. GARDNER: I'm Derrick Gardner with EPD Engineering, wal-Mart is my client.

MR. PETRO: Do it one more time so everybody can have the benefit of all those pretty lines.

MR. GARDNER: The reason we're here, we want to create a site plan. Before we can create the site plan, we need to be able to do a subdivision map is the way it's explained to me because you have to have your subdivision approved. What's happening is we're acquiring in the orange here or in the pink here, Arnoff's property, Arnoff is two parcels, okay, this other pink over-line is the Wal-Mart parcel, what's not shown on here, unfortunately, which I'll check into is there's a tax map line that comes off this corner and runs across here which shows it as being 4 parcels so that's why Mr. Edsall considered this as a lot line change, it's still going to be a lot line change of going from 4 parcels down to three parcels. The three parcels are the orange here, this being an out parcel that will be sold, this orange here which will be a leased parcel that Wal-Mart will retain but it will get its own tax ID number and will be a parcel and then the rest of it will be Wal-Mart's property.

MR. PETRO: I have no problem, I can see what I'm looking at.

MR. GARDNER: Good, I hope hope so.

MR. EDSALL: That's why I colored it because I had to backtrack to figure out.

MR. PETRO: You did all the colors?

MR. EDSALL: I've got to get back to grade school every once in a while.

MR. GARDNER: So I'll check into the tax map a little bit further and find out if this is actually four or three parcels, either way, it's still a lot line change.

MR. PETRO: Parcel's going to be created, they're not creating any non-conforming setbacks?

MR. EDSALL: No, one of the things that I pointed out i my comments they should really take just that survey plan and for the lot line change application use one plan, one sheet with a bulk table on it showing that those two lots meet the zoning, I believe they do but they haven't really shown it yet.

MR. PETRO: Size and frontage and all that I don't have any clue that any of that is correct.

MR. ARGENIO: That's a survey plan.

MR. EDSALL: Purely a survey plan single sheet.

MR. GARDNER: We have an overall parcel we'll be submitting a subdivision plan specifically for the subdivision.

MR. PETRO: So basically you're asking tonight conceptually if there's a problem with you changing the lot lines to those configurations, if there isn't any problem, prepare a map so we can look at it.

MR. GARDNER: Yes, I didn't find out about the subdivision lot line until the end of last week.

MR. PETRO: Did you ever hear of Wal-Mart?

MR. GARDNER: Yes.

MR. EDSALL: Question that involves creating the two

lots, one of my comments was we should discuss with them access to those two lots, do we really want them accessing right out onto the state highway or from a safety standpoint? And I guess the SEQRA standpoint which the Town of Newburgh will be looking at, should those two lots access from the internal access main road? I think that comes down to your long term plans, you may need to talk to Wal-Mart and have an answer.

MR. GARDNER: We'll show conceptually where we'd be planning.

MR. EDSALL: We don't really care where you would gain access from the inside but from the standard point of traffic flow, it's determined that it's not appropriate or safe to have access out onto 300, it may be that the subdivision may have a condition where it's deed restricted that you can't access out onto the state highway. Now if it needs to be a limited access, fine, but find out what they want to do.

MR. PETRO: Mark, my next point is I would say on this lot line change Town of New Windsor is absolutely going to be lead agency, it's all 100 percent in the Town of New Windsor.

MR. EDSALL: Well, it all depends, if you consider this a separate action or if you just let the whole thing go as one action, I don't know that you can separate the two.

MS. PRONTI: I don't think you can under segmentation under SEQRA, it's all one big package.

MR. GARDNER: That's part of the misunderstanding is that I thought that site plan we were coming in with a site plan and part of the site plan we were going to do a subdivision, it was later explained to me that the subdivision has to be created first before a site plan can be approved. Is that the ordinance?

MR. BABCOCK: You really can't approve a site plan on something that doesn't exist, the property has to exist.

MR. PETRO: I still don't understand or accept the fact that the Town of Newburgh would be creating lot line changes in parcels in the Town of New Windsor.

MR. EDSALL: They're not. What happens under SEQRA if there's, if one action includes several aspects or several components, a lead agency would be lead agency for the total action, same as the Cornwall Commons application which has New Windsor elements of 60 some lots in Cornwall, commercial development, Cornwall was lead agency, they reviewed the New Windsor portion.

MR. PETRO: We're going to look at it.

MR. EDSALL: And provide your comments to Newburgh.

MR. PETRO: Will we take final?

MR. EDSALL: You can't do any final action until the SEQRA process is done. But there's no sense doing the lot line change too swiftly because they still need the site plan approved so they've got to go hand in hand.

MR. BABCOCK: Little confusing.

MR. EDSALL: We'll get you there.

MR. PETRO: Well, it's not like a two lot subdivision. Okay, so what do you want to do now?

MS. PRONTI: Shall we move on to the site plan?

MR. EDSALL: I'd move on now, assuming that the lot line change has no problems and that moves forward now they want to show you what their goal is.

MR. PETRO: We'll assume that there's no problem and you can move ahead at your own risk and show us what you want to show us for the site plan.

MR. GARDNER: We can provide a subdivision map showing bulk tables and what would be happening for I guess conceptually is this okay?

MR. PETRO: You have to realize you're going to use all New Windsor bulk table information to create these lots when you pass it over to the Town of Newburgh for review.

MR. GARDNER: Absolutely.

MR. EDSALL: Their review is purely the environmental impacts and the only one I see from this lot line change is access, how are we going to access these two resultant lots?

MR. GARDNER: I know Wal-Mart's intent to be internal, we do not plan to go onto Union Avenue, there's been, there's a big traffic concern with that, we do not, if you want to then when the single sheet lot line change plan is made for those two lots add a note to the plan that references that no access will be made to the state highway from those two lots, that the access must be from the internal road network and that will be on the plan.

MR. PETRO: They may not like that on the leased parcel but you can ask it.

MR. KARNAVEZOS: But the problem is that's right around that corner and it's, you already have traffic problems at Wal-Mart with people coming down 300 and you can see the cars coming, you know, if you're heading south and people still pulling out, if you come around that bend, there's no way I don't think DOT would give them

access, would they?

MR. GARDNER: That's the other thing DOT is not going to give you driveway access with the amount of access already on this and the signals and they're not going to give us access especially because it's going to be so close to this intersection, DOT won't give it to us anyway so that's why we're not planning and we have no intent to be accessing.

MR. PETRO: How many parking spots are you increasing this entire site?

MR. GARDNER: We're going to, I think it's like 750, we're going to 1,167, we can get into that.

MR. PETRO: I know we're going to get there.

MR. SCHLESINGER: The piece on the bottom, the triangle piece, that's presently the bank?

MR. BABCOCK: Yes.

MR. SCHLESINGER: The piece right next to it which is that piece right there is a piece you don't want to keep?

MR. GARDNER: Yeah, this piece, well, would be the one for sale.

MR. SCHLESINGER: Aren't you showing the roadway through it?

MR. GARDNER: What we're showing is a possible future driveway connection, might be something that we can take into consideration.

MR. SCHLESINGER: And if you don't keep that whoever is going to make use of it is going to want access off the highway also.

MR. GARDNER: No, no, we don't want to give this parcel highway access.

MR. SCHLESINGER: Right, it would have to be through some sort of traffic flow internally.

MR. GARDNER: We'll deed restrict that.

MR. SCHLESINGER: And that you're going to keep?

MR. GARDNER: Yes.

MR. SCHLESINGER: And the overall purpose of what our goal is here we're getting to?

MR. GARDNER: Yes.

McGOEY, HAUSER and EDSALL
CONSULTING ENGINEERS P.C.

RICHARD D. McGOEY, P.E. (NY & PA)
WILLIAM J. HAUSER, P.E. (NY & NJ)
MARK J. EDSALL, P.E. (NY, NJ & PA)
JAMES M. FARR, P.E. (NY & PA)

MAIN OFFICE
33 Airport Center Drive
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(845) 567-3100
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e-mail: mheny@mhepc.com

Writer's e-mail address:
mje@mhepc.com

TOWN OF NEW WINDSOR
PLANNING BOARD
REVIEW COMMENTS

PROJECT NAME: WALMART LOT LINE CHANGES
PROJECT LOCATION: OFF NYS RT. 300 (UNION AVENUE)
SECTION 4 – BLOCK 1 – LOT 5.1, 5.2 &1 *
(* see comment below)
PROJECT NUMBER: 03-32
DATE: 22 OCTOBER 2003
DESCRIPTION: THE APPLICATION INVOLVES THE RE-ARRANGEMENT OF PROPERTY LINES BETWEEN THE INVOLVED LOTS.

1. The Walmart submittal was a single package which included an existing boundary survey (sheet 4 of 5, and a proposed site plan which depicts the desired property line configuration (sh. C-2).

   For purposes of this lot line change application, a single survey sheet depicting existing and proposed lot lines is required. It must be signed by the NY licensed surveyor.

   The plan should include a bulk table with existing and proposed values provided for each lot.

2. My concept comments regarding the application are as follows:
   - The board should discuss a possible restriction with regard to access to resultant lots 5.1 and 5.2 (shown as outparcel #1 and future lease parcel), such that it must be from the internal roadway of the Walmart site only; no direct access to Rt. 300 or Liner Road will be permitted).
   - My tax maps indicate that what is shown is lot #1 on the plan is actually two tax lots (lots #1 and #3). Verify status.
   - The highway superintendent should review the new access location onto Liner Rd., which is resultant from the lot reconfiguration.

3. The Planning Board has received a notice from the Town of Newburgh that they wish to assume the position of Lead Agency under the SEQRA review process. Since the site (overall) is substantially within the Town of Newburgh, I recommend that this board vote to concur with their request.

4. The Planning Board should determine if a Public Hearing will be necessary for this minor subdivision (in form of lot line change), or if same can be waived per Paragraph 4.B of the Subdivision Regulations.

Respectfully Submitted,

Mark J. Edsall, P.E., P.P.
Planning Board Engineer

MJE/st
NW03-32-22Oct03.doc

John. F.Y.I.

ORANGE LAKE FIRE DISTRICT

P. O. BOX 7096

TOWN OF NEWBURGH, N. Y. 12550 - 1518

JPE 1/12/04

December 17, 2003

Town of Newburgh
Fire Inspector
105 Plattekill Turnpike
Newburgh, NY 12550
Attn. : Gerald Canfield

Dear Gerald,
Last evening at the meeting of the Board of Fire Commissioners, the subject of the proposed Wal-mart expansion project was brought up. The Board wanted to let you know that they are setting up a meeting with the Board of Vails Gate to discuss the expansion project and the response plans for the proposed site.

Sincerely,

Al Nakagawa
Secretary

RESULTS OF P.B. MEETING OF: October 22, 2003

PROJECT: Wal-Mart Subdivision P.B. # 03-32

LEAD AGENCY:

AUTHORIZE COORD. LETTER: Y____ N____
TAKE LEAD AGENCY: Y____ N____

M)___ S)___ VOTE: A____ N____
CARRIED: Y____ N____

NEGATIVE DEC:

M)___ S)___ VOTE: A____ N____
CARRIED: Y____ N____

PUBLIC HEARING: WAIVED:____ CLOSED:____

M) ____ S)____ VOTE: A____ N____ SCHEDULE P.H.: Y____ N____

SEND TO O.C. PLANNING: Y____
SEND TO DEPT. OF TRANSPORTATION: Y____

REFER TO Z.B.A.: M)____ S)____ VOTE: A____ N____

RETURN TO WORK SHOP: Y___ N____

APPROVAL:

M)___ S)____ VOTE: A____ N____ APPROVED: _____

NEED NEW PLANS: Y____ N____

CONDITIONS – NOTES:

Add Forth parcel to application & Map
Send F.I. Comments
Need Plan for L.L. Cty only

Town of New Windsor
555 Union Avenue
New Windsor, NY 12553
(845) 563-4611

RECEIPT
#973-2003

10/16/2003

A P D Engineering #03-32

Received $ 50.00 for Planning Board Fees, on 10/16/2003. Thank you for stopping by the Town Clerk's office.

As always, it is our pleasure to serve you.

Deborah Green
Town Clerk

APD Engineering
3445 Winton Place - Suite 208
Rochester, NY 14623
585-273-0273
Fax: 585-273-0276
Website: www.apd.com

October 21, 2003

Town of New Windsor
New Windsor Town Hall
555 Union Avenue
New Windsor, NY 12553
Attn: Myra Mason

RE: Amendment to Application

Dear Myra:

I would like to make an amendment to the application for the Wal-Mart expansion to include a minor subdivision as part of the application. I thought that the subdivision was inclusive with site plan review and a separate application was not need for subdivision. Sorry for this misunderstanding and please correct our application to include a minor subdivision.

If you have any question or concerns please free to contact me at (585) 273 – 0273 Ext. 30

Sincerely,

Derek Gardner
Project Engineer

cc: file

M:\APDOffice\MSOfficeTemplates\APD Letter.dot

PLANNING BOARD
TOWN OF NEW WINDSOR

AS OF: 10/16/2003 PAGE: 1

LISTING OF PLANNING BOARD **FEES**
ESCROW

FOR PROJECT NUMBER: 3-32
NAME: SUBDIVISION FOR WAL-MART EXPANSION
APPLICANT: APD ENGINEERING (FOR WAL-MART STORES)

--DATE--	DESCRIPTION---------	TRANS	--AMT-CHG	-AMT-PAID	--BAL-DUE
10/15/2003	REC. CK. #7988	PAID		1200.00	
		TOTAL:	0.00	1200.00	-1200.00

10/16/03

Wal-Mart Stores, Inc.

Real Estate and Engineering-East
2001 SE 10th Street
Bentonville, AR 72716-0550
On Line: www.wal-mart.com

Michael E. Gardner, Director, Real Estate East Team
Phone 479-273-4713
E-Mail: mike.gardner@wal-mart.com

Frank Pampalone, Project Director Design & Construction
Phone: 479-204-0587
E-Mail: frank.pampalone@wal-mart.com

Rachel Brumley, Asst. Phone: 479-273-4555 FAX: 479-273-8378 E-Mail Rachel.Brumley@wal-mart.com

September 18, 2003

RECEIVED SEP 2 9 2003

RE: Wal-Mart #2104-02,
Town of Newburgh, NY
Town of New Windsor, NY

To Whom It May Concern:

Wal-Mart Stores, Inc., and Wal-Mart Real Estate Business Trust (collectively "Wal-Mart") hereby authorize Steve Cleason of APD Engineering to act as Wal-Mart's agent for the above-referenced project for the specific purpose of applying for, pursuing and obtaining any building permit, zoning permit, land use approval, subdivision approval, site plan approval, rezoning, certification, variance, or other action having the effect of permitting development that will be required of Wal-Mart in order to complete the Wal-Mart project in the Town of Newburgh, New York and/or the Town of New Windsor, New York.

Steve Cleason's authority to act as Wal-Mart's agent is specifically limited to the above-referenced project, and specifically limited to the procurement of the above-referenced permits, approvals, certifications and/or variances.

Sincerely,

Michael E. Gardner
Assistant Vice President

S/B ~~100.00~~

03-32
03-33

C:\Miscellaneous\Agent Letter_Newburgh.doc

p.2

Oct 08 03 08:44p

L & M Properties, LLC
685 Netherwood Drive
Hyde Park, NY 12538

October 14, 2003

Town Planning Board
Town of New Windsor
555 Union Avenue
New Windsor, NY 12553

RE: REAL PROPERTY AT INTERSECTION OF LINER ROAD AND UNION AVENUE

Dear Planning Board Members:

I am the owner of the above referenced property. This letter will confirm that APD Engineering and/or Harter, Secrest & Emery LLP have my consent and permission to submit and process all necessary applications to the Boards or officials of the Town of New Windsor for development of the property as a Wal-Mart Super Center. My consent covers applications for rezoning, site plan review, special use permit(s), variances(if any), sewer and water service, grading and building permits.

Michael Arnoff, Managing Member
L & M Properties, LLC

HARTER·SECREST&EMERY·LLP
ATTORNEYS AND COUNSELORS
WWW.HSELAW.COM

October 20, 2003

VIA REGULAR MAIL AND FACSIMILE

Town Planning Board
Town of New Windsor
555 Union Avenue
New Windsor, New York 12553

Re: Wal-Mart Supercenter at Intersection of Liner Road and Union Avenue

Dear Sir or Madam:

Enclosed please find a letter from Michael Arnoff, Managing Member of L&M Properties, LLC and owner of the above referenced property, authorizing APD Engineering and/or Harter, Secrest & Emery LLP to submit and process all necessary applications to the Boards or officials of the Town of New Windsor regarding the proposed Wal-Mart Supercenter to be located at the real property at the intersection of Liner Road and Union Avenue.

If you have any questions, please feel free to contact me.

Sincerely yours,

HARTER, SECREST & EMERY LLP

Kelly A. Pronti
DIRECT DIAL 585-231-1387
E-MAIL: KPRONTI@HSELAW.COM

KAP:cc
Enclosure

cc: Mr. Derek Gardner
Neal D. Madden, Esq.

Town of New Windsor

555 Union Avenue
New Windsor, New York 12553
Telephone: (845) 563-4615
Fax: (845) 563-4693

OFFICE OF THE PLANNING BOARD

PROJECT REVIEW SHEET

TO: FIRE INSPECTOR

P.B. FILE #**03-32** DATE RECEIVED: **10-15-03**

PLEASE RETURN COMPLETED FORM TO MYRA BY: 10-20-03 TO BE ON AGENDA FOR THE 10-22-03 PLANNING BOARD MEETING.

THE MAPS AND/OR PLANS FOR:

WAL-MART SUBDIVISION
Applicant or Project Name

SITE PLAN _____, SUBDIVISION **XXX**, LOT LINE CHANGE _____, SPECIAL PERMIT _____

HAVE BEEN REVIEWED BY THE UNDERSIGNED AND ARE:

☐ APPROVED:

Notes: _____

☒ DISAPPROVED:

Notes: NEED Fire Department Contract As to Fire Protection Signed by Orange Lake Fire District and Vails Gate Fire District Board of Fire Commissioners + Signed Agreement from Both Towns As to responsibility of Code Enforcement As project crosses Both Municipal Boundaries and Fire District Boundaries

Signature: _____ 10/18/03
Reviewed by date

Town of New Windsor

555 Union Avenue
New Windsor, New York 12553
Telephone: (845) 563-4615
Fax: (845) 563-4693

OFFICE OF THE PLANNING BOARD

PROJECT REVIEW SHEET

RECEIVED
OCT 17 2003
N.W. HIGHWAY DEPT.

TO: HIGHWAY DEPARTMENT

P.B. FILE #**03-32** DATE RECEIVED: **10-15-03**

PLEASE RETURN COMPLETED FORM TO MYRA BY: 10-20-03 TO BE ON AGENDA FOR THE 10-22-03 PLANNING BOARD MEETING.

THE MAPS AND/OR PLANS FOR:

WAL-MART SUBDIVISION
Applicant or Project Name

SITE PLAN _____, SUBDIVISION **XXX**, LOT LINE CHANGE _____, SPECIAL PERMIT _____

HAVE BEEN REVIEWED BY THE UNDERSIGNED AND ARE:

☑ APPROVED:

Notes: _____

☐ DISAPPROVED:

Notes: _____

Signature: Henry J Hunt 10/22/03
Reviewed by date

TOWN OF NEW WINDSOR

555 UNION AVENUE
NEW WINDSOR, NEW YORK 12553
Telephone: (845) 563-4615
Fax: (845) 563-4695

PLANNING BOARD APPLICATION

TYPE OF APPLICATION (check appropriate item):

Subdivision X Lot Line Change ___ Site Plan ___ Special Permit ___

Tax Map Designation: Sec. 4 Block 1 Lot 1.1

BUILDING DEPARTMENT REFERRAL NUMBER PA2003 - 1187

1. Name of Project Wal-Mart Expansion

2. Owner of Record Wal-Mart Stores Inc. Phone (479) 204-0218

   Address: 2001 SE 10th Street Bentonville, AR 72716-0550
   (Street Name & Number) (Post Office) (State) (Zip)

3. Name of Applicant APD Engineering, PLLC Phone (585) 273-0273 Ext.

   Address: 3445 Winton Place Ste. 208 Rochester, NY 14623
   (Street Name & Number) (Post Office) (State) (Zip)

4. Person Preparing Plan APD Engineering - Derek Gardner Phone (585) 273-0273 Ext

   Address: 3445 Winton Place, Ste.208 Rochester, NY 14623
   (Street Name & Number) (Post Office) (State) (Zip)

5. Attorney Harter, Secrest & Emery Kelly Pronti Phone (585) 231-1387

   Address 1600 Bausch & Lomb Place Rochester, NY 14604
   (Street Name & Number) (Post Office) (State) (Zip)

6. Person to be notified to appear at Planning Board meeting:

   Derek Gardner (585) 273-0273 Ext. 30 (585) 273-0276
   (Name) (Phone) (fax)

7. Project Location: On the North East side of Union Avenue
   (Direction) (Street)

8. Project Data: Acreage 40.8 Zone C School Dist. ___

RECEIVED
TOWN OF NEW WINDSOR
OCT 15 2003
ENGINEER & PLANNING

(PLEASE DO NOT COPY 1 & 2 AS ONE PAGE TWO-SIDED)

03-32

9. Is this property within an Agricultural District containing a farm operation or within 500 feet of a farm operation located in an Agricultural District? Yes_____ No X

***This information can be verified in the Assessor's Office.**
***If you answer yes to question 9, please complete the attached AAgricultural Data Statement.**

10. Detailed description of Project: (Use, Size, Number of Lots, etc.) +/- 70,000 sq. ft. expansion with the development of two one acre lots.

11. Has the Zoning Board of Appeals Granted any Variances for this property? yes_____no____
12. Has a Special Permit previously been granted for this property? yes_____no_____

IF THIS APPLICATION IS SIGNED BY ANYONE OTHER THAN THE PROPERTY OWNER, A SEPARATE NOTARIZED STATEMENT OR PROXY STATEMENT FROM THE OWNER MUST BE SUBMITTED, AT THE TIME OF APPLICATION, AUTHORIZING THIS APPLICATION.

STATE OF NEW YORK)
SS.:
COUNTY OF ORANGE)

THE UNDERSIGNED APPLICANT, BEING DULY SWORN, DEPOSES AND STATES THAT THE INFORMATION, STATEMENTS AND REPRESENTATIONS CONTAINED IN THIS APPLICATION AND SUPPORTING DOCUMENTS AND DRAWINGS ARE TRUE AND ACCURATE TO THE BEST OF HIS/HER KNOWLEDGE AND/OR BELIEF. THE APPLICANT FURTHER ACKNOWLEDGES RESPONSIBILITY TO THE TOWN FOR ALL FEES AND COSTS ASSOCIATED WITH THE REVIEW OF THIS APPLICATION.

SWORN BEFORE ME THIS:

7 DAY OF October 2003

(OWNER'S SIGNATURE)

(AGENT'S SIGNATURE)

Steven Cleason
Please Print Agent's Name as Signed

Brenda J. Forrest
NOTARY PUBLIC

BRENDA J. FORREST
Notary Public, State of New York
No. 01FO6034743
Qualified in Monroe County
Commission Expires Dec. 13, 2003

****

TOWN USE ONLY:

TOWN OF NEW WINDSOR
OCT 15 2003
ENGINEERING & PLANNING

DATE APPLICATION RECEIVED

03-32
APPLICATION NUMBER

BCC/BZA
"XX"

ATTACHMENTS

A. Flood Hazard Area Development Permit Application Form.

B. Certificate of Compliance

PLEASE NOTE: IF PROPERTY IS NOT IN A FLOOD ZONE, PLEASE INDICATE THAT ON THIS FORM AND SIGN YOUR NAME. RETURN FORM WITH PLANNING BOARD APPLICATION.

IF PROPERTY IS LOCATED IN A FLOOD ZONE, PLEASE COMPLETE THE ATTACHED (LEGAL SIZE) PAPERS AND RETURN WITH PLANNING BOARD APPLICATION.

Not In A Flood Zone

Steven G. Cleason, P.E.

10/7/03
Date

03-32

14-16-2 (9/95)-7c

617.20 SEQR

Appendix A

State Environmental Quality Review

FULL ENVIRONMENTAL ASSESSMENT FORM

Purpose: The full EAF is designed to help applicants and agencies determine, in an orderly manner, whether a project or action may be significant. The question of whether an action may be significant is not always easy to answer. Frequently, there are aspects of a project that are subjective or unmeasureable. It is also understood that those who determine significance may have little or no formal knowledge of the environment or may not be technically expert in environmental analysis. In addition, many who have knowledge in one particular area may not be aware of the broader concerns affecting the question of significance.

The full EAF is intended to provide a method whereby applicants and agencies can be assured that the determination process has been orderly, comprehensive in nature, yet flexible enough to allow introduction of information to fit a project or action.

Full EAF Components: The full EAF is comprised of three parts:

Part 1: Provides objective data and information about a given project and its site. By identifying basic project data, it assists a reviewer in the analysis that takes place in Parts 2 and 3.

Part 2: Focuses on identifying the range of possible impacts that may occur from a project or action. It provides guidance as to whether an impact is likely to be considered small to moderate or whether it is a potentially-large impact. The form also identifies whether an impact can be mitigated or reduced.

Part 3: If any impact in Part 2 is identified as potentially-large, then Part 3 is used to evaluate whether or not the impact is actually important.

DETERMINATION OF SIGNIFICANCE -Type 1 and Unlisted Actions

Identify the Portions of EAF completed for this project: ☒ Part 1 ☐ Part 2 ☐ Part 3

Upon review of the information recorded on this EAF (Parts 1 and 2 and 3 if appropriate), and any other supporting information, and considering both the magnitude and importance of each impact, it is reasonably determined by the lead agency that:

☐ A. The project will not result in any large and important impact(s) and, therefore, is one which **will not** have a significant impact on the environment, therefore **a negative declaration will be prepared.**

☐ B. Although the project could have a significant effect on the environment, there will not be a significant effect for this Unlisted Action because the mitigation measures described in PART 3 have been required, therefore a **CONDITIONED negative declaration will be prepared.***

☐ C. The project may result in one or more large and important impacts that may have a significant impact on the environment, therefore a **positive declaration will be prepared.**

*A Conditioned Negative Declaration is only valid for Unlisted Actions

Wal-Mart Expansion – Newburgh & New Winsor, NY
Name of Action

Name of Lead Agency

Print or Type Name of Responsible Officer in Lead Agency

Title of Responsible Officer

Signature of Responsible Officer in Lead Agency

Signature of Preparer (If different from responsible officer)

10/07/03
Date

RECEIVED
TOWN OF NEW WINDSOR
OCT 15 2003
ENGINEER & PLANNING

03-32

PART 1- PROJECT INFORMATION

Prepared by Project Sponsor

NOTICE: This document is designed to assist in determining whether the action proposed may have a significant effect on the environment. Please complete the entire form, Parts A through E. Answers to these questions will be considered as part of the application for approval and may be subject to further verification and public review. Provide any additional information you believe will be needed to complete Parts 2 and 3.

It is expected that completion of the full EAF will be dependent on information currently available and will not involve new studies, research or investigation. If information requiring such additional work is unavailable, so indicate and specify each instance.

NAME OF ACTION **Wal-Mart Expansion – Newburgh, NY**		
LOCATION OF ACTION (include Street Address, Municipality and County) **Union Avenue, Town of Newburgh & New Windsor, Orange County**		
NAME OF APPLICANT/SPONSOR **APD Engineering, PLLC (sponsor for Wal-Mart Stores, Inc.)**	BUSINESS TELEPHONE **(585) 273-0273**	
ADDRESS **3445 Winton Place, Suite 208**		
CITY/PO **Rochester**	STATE **NY**	ZIP CODE **14623**
NAME OF OWNER (if different) **Wal-Mart Stores, Inc.**	BUSINESS TELEPHONE **(479) 204-0218**	
ADDRESS Sam M. Walton Development, 2001 SE 10th Street		
CITY/PO **Bentonville**	STATE **AR**	ZIP CODE **72716-0550**
DESCRIPTION OF ACTION **Construction of an ±73,375 SF expansion to the existing Wal-Mart store, with associated modifications to existing parking areas, drives, utilities, etc.**		

Please Complete Each Question - Indicate N.A. if not applicable

A. Site Description

Physical setting of overall project, both developed and undeveloped areas.

1. Present land use: ☐ Urban ☐ Industrial ☒ Commercial ☐ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☐ Agricultural ☐ Other _____

2. Total acreage of project area: ±40.8

APPROXIMATE ACREAGE	PRESENTLY		AFTER COMPLETION	
Meadow or Brushland (Non-agricultural)	±7.65	acres	±5.11	acres
Forested		acres		acres
Agricultural (Includes orchards, cropland, pasture, etc.)		acres		acres
Wetland (Freshwater or tidal as per Articles 24, 25 of ECL)	±7.92	acres	±8.34	acres
Water Surface Area	±1.54	acres	±1.54	acres
Unvegetated (Rock, earth or fill)		acres		acres
Roads, buildings and other paved surfaces	±12.81	acres	±15.80	acres
Other (Indicate type) Lawn/landscaping	±10.88	acres	±10.01	acres

3. What is predominant soil type(s) on project site? Silt with a little sand

a. Soil drainage: ☐ Well drained _____ % of site ☒ Moderately well drained 20 % of site
☒ Poorly drained 80 % of site

b. If any agricultural land is involved, how many acres of soil are classified within soil group 1 through 4 of the NYS Land Classification System? N.A. acres. (See 1 NYCRR 370).

4. Are there bedrock outcroppings on project site? ☐ Yes ☒ NO

a. What is depth to bedrock? Over 20' (in feet)

5. Approximate percentage of proposed project site with slopes: [X] 0-10% ±85 % [ ] 10-15% 2 %
[X] 15% or greater ±13 %

6. Is project substantially contiguous to, or contain a building, site, or district, listed on the State or the National Registers of Historic Places? [ ] Yes [X] No

7. Is project substantially contiguous to a site listed on the Register of National Natural Landmarks? [ ] Yes [X] No

8. What is the depth of the water table? ~~Over 20' @ BLDG~~ (in feet)

9. Is site located over a primary, principal, or sole source aquifer? [ ] Yes [X] No

10. Do hunting, fishing or shell fishing opportunities presently exist in the project area? [ ] Yes [X] No

11. Does project site contain any species of plant or animal life that is identified as threatened or endangered?
[ ] Yes [X] No According to _____
Identify each species _____

12. Are there any unique or unusual land forms on the project site? (i.e., cliffs, dunes, other geological formations)
[ ] Yes [X] No Describe _____

13. Is the project site presently used by the community or neighborhood as an open space or recreation area?
[ ] Yes [X] No If yes, explain _____

14. Does the present site include scenic views known to be important to the community?
[ ] Yes [X] No

15. Streams within or contiguous to project area: None
a. Name of Stream and name of River to which it is tributary N.A.

16. Lakes, ponds, wetland areas within or contiguous to project area: (None)
a. Name Wetlands "Federal" b. Size (In acres) +/- 8 Acres

17. Is the site served by existing public utilities? [X] Yes [ ] No
a) If yes, does sufficient capacity exist to allow connection? [X] Yes [ ] No
b) If yes, will improvements be necessary to allow connection? [X] Yes [ ] No (relocation water & sewer connection in New Windsor)

18. Is the site located in an agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? [ ] Yes [X] No

19. Is the site located in or substantially contiguous to a Critical Environmental Area designated pursuant to Article 8 of the ECL, and 6 NYCRR 617? [ ] Yes [X] No

20. Has the site ever been used for the disposal of solid or hazardous wastes? [ ] Yes [X] No

B. Project Description

1. Physical dimensions and scale of project (fill in dimensions as appropriate)
a. Total contiguous acreage owned or controlled by project sponsor ±40.8 acres.
b. Project acreage to be developed: ±5.4 Acres this developement
c. Project acreage to remain undeveloped 14.9 acres.
d. Length of project, in miles: N.A (If appropriate)
e. If the project is an expansion, indicate percent of expansion proposed ~~±54% of that ± 23%~~ previously Approved
f. Number of off-street parking spaces existing 650 ;proposed 1011
g. Maximum vehicular trips generated per hour 511 enter, 492 exit (upon completion of project)?For entire project
h. If residential: Number and type of housing units: N.A.

	One Family	Two Family	Multiple Family	Condominium
Initially				
Ultimately				

i. Dimensions (in feet) of largest proposed structure ±32 height; ±195' width; ±380' length.
j. Linear feet of frontage along a public thoroughfare project will occupy is? ±1122 ft.

2. How much natural material (i.e., rock, earth, etc.) will be removed from the site? ±157,000 CY (soil) tons/cubic yards

3. Will disturbed areas be reclaimed? [X] Yes [ ] No [ ] N/A
   a. If yes, for what intended purpose is the site being reclaimed? Building, parking, lawn and landscape areas
   b. Will topsoil be stockpiled for reclamation? [X] Yes [ ] No
   c. Will upper subsoil be stockpiled for reclamation? [X] Yes [ ] No

4. How many acres of vegetation (trees, shrubs, ground covers) will be removed from site? 2.54 acres.

5. Will any mature forest (over 100 years old) or other locally important vegetation be removed by this project?
   [ ] Yes [X] No

6. If single phase project: Anticipated period of construction ±12 months, (including demolition).

7. If multi-phased:
   a. Total number of phases anticipated 1 (number).
   b. Anticipated date of commencement phase 1 2/1/04 month _____ year, (including demolition).
   c. Approximate completion date of final phase N/A month _____ year.
   d. Is phase 1 functionally dependent on subsequent phases? [ ] Yes [ ] No

8. Will blasting occur during construction? [ ] Yes [X] No

9. Number of jobs generated: during construction ±350 ; after project is complete ±450 including existing.

10. Number of jobs eliminated by this project none.

11. Will project require relocation of any projects or facilities? [X] Yes [ ] No If yes, explain Relocation of some on-site utilities.

12. Is surface liquid waste disposal involved? [ ] Yes [X] No
   a. If yes, indicate type of waste (sewage, industrial, etc.) and amount N.A.
   b. Name of water body into which effluent will be discharged N.A.

13. Is subsurface liquid waste disposal involved? [ ] Yes [X] No Type _____

14. Will surface area of an existing water body increase or decrease by proposal? [ ] Yes [X] No
   Explain N.A.

15. Is project or any portion of project located in a 100-year flood plain? [ ] Yes [X] No

16. Will the project generate solid waste? [X] Yes [ ] No
   a. If yes, what is the amount per month ±5 tons
   b. If yes, will an existing solid waste facility be used? [X] Yes [ ] No
   c. If yes, give name NYSDEC approved landfill locations NYSDEC approved landfill
   d. Will any wastes not go into a sewage disposal system or into a sanitary landfill? [X] Yes [ ] No
   e. If yes, explain Recycled cardboard

17. Will the project involve the disposal of solid waste? [ ] Yes [X] No
   a. If yes, what is the anticipated rate of disposal? _____ tons/month.
   b. If yes, what is the anticipated site life? _____ years.

18. Will project use herbicides or pesticides? [X] Yes [ ] No Routine Lanscape & Lawn care

19. Will project routinely produce odors (more than one hour per day)? [ ] Yes [X] No

20. Will project produce operating noise exceeding the local ambient noise levels? [ ] Yes [X] No

21. Will project result in an increase in energy use? [X] Yes [ ] No
   If yes, indicate type(s) gas & electric

22. If water supply is from wells, indicate pumping capacity N.A. gallons/minute,

23. Total anticipated water usage per day ±6,700 gallons/day.

24. Does project involve Local, State or Federal funding? [ ] Yes [X] No
   If yes, explain N.A.

25. Approvals Required:			Type	Submittal Date
Town Council	☐ Yes	☒ No		
Town Planning Board	☒ Yes	☐ No	Site Plan Approval	10/01/03
Town Zoning Board	☒ Yes	☐ No	Parking Size Variance (New Windsor)	
State, County Health Department	☒ Yes	☐ No	Waterline & Sewer Review	
Other Local Agencies	☒ Yes	☐ No	Building Permit	
Other Regional Agencies	☒ Yes	☐ No	County Planning	
State Agencies	☒ Yes	☐ No	NYSDEC, NYSDOT	
Federal Agencies	☒ Yes	☐ No	Army Corps Of Engineers	

C. Zoning and Planning Information

1. Does proposed action involve a planning or zoning decision? ☒ Yes ☐ No
   If yes, indicate decision required:
   ☐ zoning amendment ☐ zoning variance ☐ special use permit ☐ subdivision ☒ site plan
   ☐ new/revision of master plan ☐ resource management plan ☐ other _____

2. What is the zoning classification(s) of the site? C – Design Shopping (New Windsor); IB – Interchange Business (Newburgh)

3. What is the maximum potential development of the site if developed as permitted by the present zoning?
   + 457,380 SF of Building in the Town of Newburgh and + 318,960 SF of Building in the Town of New Windsor (building size is based on lot coverage)

4. What is the proposed zoning of the site? Same as existing.

5. What is the maximum potential development of the site if developed as permitted by the proposed zoning?
   This expansion fall within previously approved square footage.

6. Is the proposed action consistent with the recommended uses in adopted local land use plan? ☒ Yes ☐ No

7. What are the predominant land use(s) and zoning classifications within a 1/4-mile radius of proposed action?
   Commercial and residential

8. Is the proposed action compatible with adjoining/surrounding land uses within a 1/4-mile? ☒ Yes ☐ No

9. If the proposed action is the subdivision of land, how many lots are proposed? 3 Lots
   a. What is the minimum lot size proposed? 1 Acres

10. Will proposed action require any authorization(s) for the formation of sewer or water districts? ☐ Yes ☒ No

11. Will the proposed action create a demand for any community provided services (recreation, education, police, fire protection)? ☒ Yes ☐ No
    a. If yes, is existing capacity sufficient to handle projected demand? ☒ Yes ☐ No

12. Will the proposed action result in the generation of traffic significantly above present levels? ☒ Yes ☐ No
    a. If yes, is the existing road network adequate to handle the additional traffic? ☒ Yes ☐ No (N.A.)
    (w/ entrance improvements)

D. Informational Details

Attach any additional information as may be needed to clarify your project. If there are or may be any adverse impacts associated with your proposal, please discuss such impacts and the measures, which you propose to mitigate or avoid them.

E. Verification

I certify that the information provided above is true to the best of my knowledge.

Applicant/Sponsor Name APD Engineering, PLLC (sponsor for Wal-Mart Stores, Inc.) Date 10-07-2003

Signature Derek Gordon Title Project Engineer

If the action is in the Coastal Area, and you are a state agency, complete the Coastal Assessment Form before proceeding with this assessment.

RECEIVED
TOWN OF NEW WINDSOR
OCT 15 2003
ENGINEER & PLANNING

Long Form EAF Supplement

For
Wal-Mart – Newburgh & New Windsor NY

October 7, 2003

Description:

Wal-Mart is proposing a ±73,365 SF expansion to the existing ±126,029 SF Wal-Mart retail store. Of the ±73,365 SF expansion, 30,000 SF were included by the Town of Newburgh Planning Board in the original Wal-Mart approvals as a future expansion. The proposed 73,365 SF expansion includes ±23,000 SF which will be located in the Town of New Windsor. The area of the expansion south of the existing Wal-Mart will become the grocery side of the Wal-Mart Supercenter. The Supercenter will offer a variety of new goods and services while enhancing the architectural appearance of the building. The project will involve, expanding Wal-Mart's parking area, modifying on-site utilities, and modifying entrance and interior access drives on-site along with the addition of a new access from Linear Road. The project will also include a new ±1 acre out parcel and ±1 acre lease parcel. The project will relocate or remove ±27,000 SF of the Krnott Moving and storage company.

The applicant has performed evaluations of the impacts of this project and offers the information contained and referenced below.

Traffic:

The expansion will incorporate the previously approved 30,000 square footage and add an additional 43,325 SF and 2 outparcels. SRF & Associates prepared a traffic evaluation dated September, 2003. The conclusions of the traffic analysis are as follows:

1. Modify the existing eastbound right turn lane at the Route 300 / Wal-Mart Drive intersection to allow shared left / right turn movements. This action will better accommodate the future traffic demand by providing a dual left movement on this approach;

2. Modify the existing three-phase signal operation at the Route 300 / Wal-Mart Drive intersection to eliminate the eastbound right turn overlap;

3. Modify the span wire assembly (sign and signal head modifications) as appropriate to accommodate an eastbound dual left turn movement at the Route 300 / Wal-Mart Drive intersection; and

4. It is imperative that the final position of plantings, signs and miscellaneous site amenities, relative to the expansion, are not placed at locations that would prohibit or limit the required sight distances from the access drives.

Soils:

Empire Geo Services, Inc., of Rochester, NY performed an extensive geotechnical evaluation of the site. The evaluation determined that the on-site soils can provide sufficient bearing capacity to support the proposed construction. The depth to bedrock was determined to be greater than ±20 feet. The depth to the water table was estimated to be greater than ±20 feet. The existing soils will support soils of 1 on 2 slopes with soils stabilizations seeding.

Wetlands:

The applicant has performed a full wetland delineation of the site. NEA, Inc., of Fredonia, NY, conducted a thorough review of existing site information and performed wetland delineation in accordance with the US Army Corps of Engineers' guidelines. The results of NEA, Inc. research and on-site delineation determined that there are existing wetlands located on the site. The proposed expansion will require relocating the existing northwest wetlands along the existing pond on the site. A rate of 1.4 will be used to relocate the amount of wetlands disturbed. The amount of wetlands will be increased within the site. The applicant will work with the U.S. Army Corps of Engineers to determine whether the wetlands are jurisdictional or man made. Delineations performed during the original Wal-Mart approvals did not designate this area as meeting the federal criteria. A permit from the Army Corps of Engineers will be required for the relocation of the wetlands.

Stormwater:

The expansion will increase the amount of impervious area through parking lot, impervious roof and access roadways. Since the impervious area will increase, the amount of storm run-off will also increase. The amount of storm run-off will be increased but the rate at which the storm will be released from the site will stay the same. The existing 30" HDPE will be extended in length. The size and slope of the detention basin outlet structure will not being modified. The detention basin will be increase in size to make up for the difference in storage volume between the peak storm run-off and the peak detention basin outlet flow. The storm piping systems will be relocated and increased in size to fit the expansion. The new detention system will be sized to properly handle a 25, 50 and 100 year storm event. In addition, the new requirements by the New York State Department of Environmental Conservation (NYSDEC) for water quality have been incorporated by providing a permanent and temporary stone filter to treat the 90% storm. Calculations are attached herein showing that the basins, as designed, exceed the required volume to treat the 90% storm.

Utilities:

The existing Wal-Mart store is currently serviced by municipal utilities on-site. The existing water main will not be modified except to relocate fire hydrant. The Fire hydrants are being relocated to stay within the striped/curbed islands. The existing services supplied by the Town of Newburgh will be adequate to the meet the demands of the Wal-Mart Supercenter.

The existing sanitary sewer main will not be modified or expanded. A proposed new sanitary sewer main will run along the front of the proposed grocery side of Wal-Mart. A sanitary force main will be required because of the elevation difference between the roadway and finish floor of the Wal-Mart Supercenter. A secondary connection will be added on the grocery side of the Wal-Mart Supercenter and be directed to the New Windsor Township.

Gas, electric, and telephones are already on-site and are currently providing service to the existing building. No off-site improvements should be necessary due to the expansion.

LEGEND

- TIME OF CONCENTRATION PATH
- WOODS
- BRUSH
- LAWN
- IMPERVIOUS
- 1 ACRE RESIDENTIAL

NO.	DATE	REVISIONS	DRN	APPR

PROJECT	
PROJ. ENGR.:	KS
DESIGNED BY:	AL
DRAWN BY:	IL
CHECKED BY:	KS
APPROVED BY:	
CONTOUR INTERVAL:	2 FT
DATUM:	

0 25 50 100 200
1"=100'

DRAINAGE PLAN - EXISTING CONDITIONS
VALLEY FIELDS ESTATES

BETHLEHEM ROAD
TOWN OF NEW WINDSOR
ORANGE COUNTY, NEW YORK

SPECTRA ENGINEERING, ARCHITECTURE AND SURVEYING P.C.
1 Civic Center Plaza, Suite 401
Poughkeepsie, NY 12601
TEL (845) 454-9440 FAX (845) 454-9206

DATE:	8/25/04	SCALE:	1" = 100'	PROJ NO.	02150	SHEET	1 OF 2

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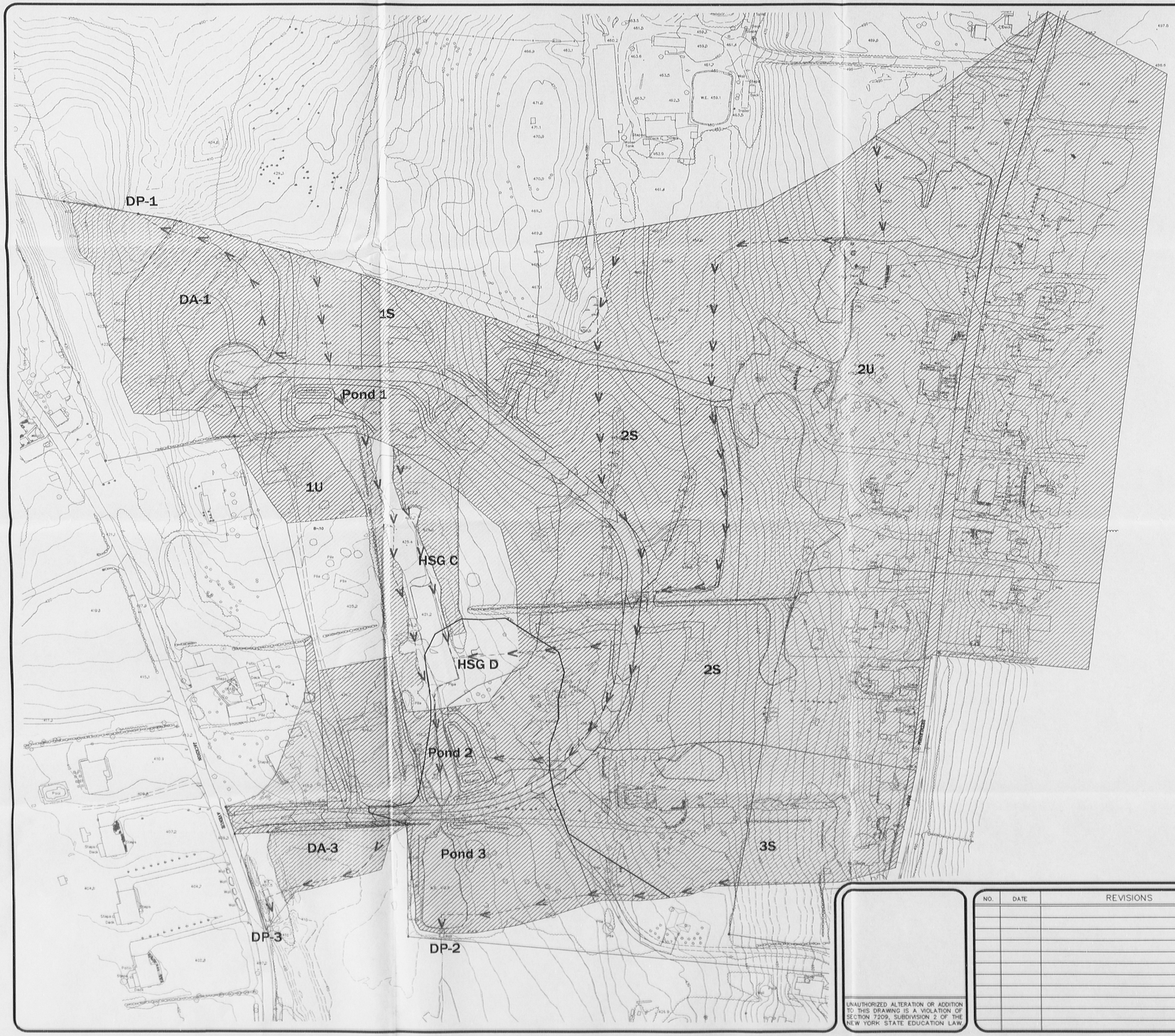

LEGEND

- TIME OF CONCENTRATION PATH
- WOODS
- BRUSH
- LAWN
- IMPERVIOUS
- 1 ACRE RESIDENTIAL

NO.	DATE	REVISIONS	DRN	APPR

PROJECT	
PROJ. ENGR.:	KS
DESIGNED BY:	AL
DRAWN BY:	IL
CHECKED BY:	KS
APPROVED BY:	
CONTOUR INTERVAL:	2 FT
DATUM:	

0 25 50 100 200
1"=100

DRAINAGE PLAN - PROPOSED CONDITIONS
VALLEY FIELDS ESTATES

BETHLEHEM ROAD
TOWN OF NEW WINDSOR
ORANGE COUNTY, NEW YORK

SPECTRA ENGINEERING, ARCHITECTURE AND SURVEYING P.C.
1 Civic Center Plaza, Suite 401
Poughkeepsie, NY 12601
TEL (845) 454-9440 FAX (845) 454-9206

DATE:	8/25/04	SCALE:	1" = 100'	PROJ NO.	02150	SHEET	2 OF 2

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